CENTER ON CONFLICT AND DEVELOPMENT
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PAYMENT AND PREDATION

POLITICS OF WAGES AND VIOLENCE IN THE CONGOLESE ARMY

November 2015 | Grant Gordon

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The Center on Conflict and Development *(ConDev) at Texas A&M University seeks to improve the effectiveness of development programs and policies for conflict-affected and fragile countries through multidisciplinary research, education and development extension. The Center uses science and technology to reduce armed conflict, sustain families and communities during conflict, and assist states to rapidly recover from conflict.*

Payment and Predation:
The Politics of Wages and Violence in the Congolese Army*

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Abstract

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1 Introduction

In fragile states, institutions responsible for maintaining law and order are often a source of exploitation and instability. Nowhere is this more true than in militaries, which are simultaneously charged with establishing a legitimate monopoly on violence yet represent the greatest source of coup-risk, violent conflict, and civilian abuse (Walter, 1999; Hoddie and Hartzell, 2003; Rubin, 2008; Svolik, 2009). To combat these problems, militaries have become an institutional choice of export and target for foreign aid; the United States, for example, spends more on annual foreign military assistance than on its entire development portfolio.[1] Indeed, the international community has prioritized building effective armies as a crucial component of the broader state-building project.

Yet, militaries are often weak by design. While leaders who face external threats must invest in forces for protection, building forces strong enough to ward off these threats creates militaries strong enough to overthrow a regime. All leaders face this 'guardianship dilemma' and balance a fine line between cultivating weakness and strength (Besley and Robinson, 2010; McMahon and Slantchev, 2015).[2] Despite the fact that leaders can draw a broad set of strategies to undermine potential threats within the military to maximize survival, developing a professional, civilian-ruled military remains a challenge (Huntington, 1957; Janowitz, 1961; Desch, 2001).

At its core, leaders face a fundamental problem of discrimination. Rulers must distinguish those who are loyal from those who are untrustworthy in order to selectively empower the former and reduce the threat of the latter. Without the technology to distinguish between soldier type, leaders can either weaken all soldiers and open themselves to greater external threat, or strengthen all soldiers, which opens them up to threat from within.

This dilemma is particularly important in post-conflict armies comprised of previously warring parties that are often the product of negotiated settlements used to end violence. Of the 128 civil wars that occurred between 1945 and 2006, 40% ended in settlements that mandated the integration of armed groups into a national army (Hartzell, 2014). These reintegration processes aim to address security concerns between groups over military control, reduce the number of ex-rebels integrated into civilian life, and create inclusive institutions

[1] For example, in FY 2015, the US State Department spent a total of 8.2 billion dollars on international security assistance. Comparatively, the US allocated 4.2 billion to development aid, including official development assistance, USAID administration and the State Department Economic Support Fund (CBO, 2015).

[2] Here, I borrow the terminology, 'the guardianship dillemma' from McMahon and Slantchev (2015), variants of which are more classically known as the 'civil-military problematique' (Feaver, 1996).

(Simonsen, 2007; Glassmyer and Sambanis, 2008; Samii, 2013; Licklider, 2014). However, integrating competing factions into unified armies often generates the core set of problems it seeks to resolve. Reintegrated armies are infused with soldiers whose loyalty to a broader national government are tenuous, which, in turn, amplifies the guardianship dilemma.[3]

In this paper, I explore how Congolese soldiers operating in North Kivu, the largest operational theater in the Democratic Republic of Congo and the epicenter of one of the most violent conflicts in Africa, solve this crucial problem. I argue that leaders use non-payment as a screening strategy to distinguish the loyal from the untrustworthy. Contrary to the belief that missing payments are solely a function of bureaucratic mismanagement or a lack of capacity, I contend that non-payment is used as a form of trial and tribulation that reveals commitment by driving disloyal soldiers to defect and loyal soldiers to weather challenging times. Non-payment causes unpaid soldiers to engage in extortion and violence against civilians, which is managed by commanding officers and used to cultivate internal cohesion. Coupled, these costly actions help discriminate the committed from the uncommitted and generate the very loyalty that leaders seek to identify. This helps the regime overcome the guardianship dilemma and in doing so, illuminates how this very process produces predatory institutions.

I draw on research I conducted with members of the Armed Forces of the Democratic Republic of Congo (FARDC) between 2014 and 2015. I couple thick description based on 100 open-ended qualitative interviews with a fine-grained quantitative analysis of 350 members of the military to provide a detailed anatomy of payments, violence and loyalty. Broadly, I employ a methodological approach inspired by a growing literature that profiles the inner-workings of hard-to-access and understudied institutions, including street gangs (Levitt and Venkatesh, 2000), the mafia (Gambetta, 1996), and pirates (Leeson, 2007). I treat the data I bring to bear not as a doubly-decisive test of a hypothesis (Van Evera, 1997), but rather as corroborative evidence that forms the foundation of a theory for how the military uses novel strategies to manage the age-old problem of the guardianship dilemma.

My argument and analysis proceed in a series of steps. I first demonstrate that the Congolese military selectively allocates wages to different unit-types by month. With both qualitative and quantitative data, I show that the army chooses *not* to pay four different types of units that correspond to key cleavages within the army and Congolese society more broadly, and that the regime rotates non-payment by month across units. I then demon-

[3] I use the term “reintegrated army" throughout this paper to refer to armies that have implemented policies which incorporate previously warring parties into a single national army.

strate that missing payments generate defection within units and that those who defect are uncommitted to the regime. I define defection as the voluntary or coerced departure from one's unit and the army.[4] I then document that missing payments are associated with systematically higher levels of extortion — theft, taxation, and forced labor — as well as three types of violence against civilians — forced detention, torture, and sexual violence. While there is suggestive evidence that violence allows officers to further test the loyalty of rank-and-file soldiers, this type of predation is primarily the byproduct of screening out soldiers through non-payment in the first phase. Lastly, I show that violence is used to cultivate internal cohesion among soldiers who remain; analysis reveals that soldiers who are not paid and engage in various forms of predation are substantially more loyal to both their units and the army.

While this methodological approach provides leverage over an inaccessible and violent institution, an important set of caveats are in order. First, I analyze self-reported data, which are susceptible to measurement error that stems from a set of cognitive biases that shape survey response. Moreover, participants may distort or fabricate responses about sensitive information, including responsibility for extortion and violence. This remains a key challenge to generating accurate data on violence in all studies of conflict and similarly afflicts this paper. Additionally, I primarily draw on data from active soldiers. While I leverage information on unit-level defections to understand patterns of loyalty and compliance, this information comes from soldiers within units who observed these patterns among all members. Lastly, the study analyzes retrospective data, which are observational and noisy in nature.

I employ a series of design and analysis strategies to mitigate against these concerns. I use within-subject repeated survey questioning to assess the extent of measurement error and bias. I report a set of robustness checks to ensure that findings are not sensitive to any particular regression specification and use qualitative work to ground and validate my quantitative analysis. Lastly, I field a survey experiment with soldiers to provide a complementary set of causal estimates of the impact of missing payments on civilian abuse and use this approach to further interrogate the mechanisms through which abuse arises. Ultimately, while I face a series of challenges in the extent to which these data are reliable

[4]Comparatively, though somewhat different, Lyall (2014) defines "mass desertion as the unauthorized wartime withdrawal of a unit (or group of soldiers) from the battlefield or its rear areas with the intention of permanently abandoning the fight," (Pg. 3). My definition does not depend on proximity to battle and also captures forced ejection. This broader approach is more liberal in nature, yet is particularly well-suited to examine the determination of loyalty and assess screening mechanisms.

and representative, the evidence garnered here offers the unique ability to assess the inner workings of the Congolese military.

Importantly, the strategies I detail for managing the guardianship dilemma are by no means the sole strategies available or used by the Congolese army. In the fall of 2014, for example, the Government was charged with assassinating a rising general who was widely celebrated and perceived as an internal threat and sent the remaining parts of his contingent to the Central African Republic to participate in a peacekeeping mission where distance would reduce their potential threat. The Congolese government has also rotated army leadership, cultivated conflicting chains of commands, and used other strategies to maintain control.

Rather, the strategies I detail in this research are unique for two reasons. While the majority of strategies implemented to reduce threat are indiscriminate in nature, the strategies I analyze are used to as a screening technology that distinguishes soldier type. This approach is important precisely because it moves beyond blunt tactics common in the analysis of regime behavior and instead examines the relatively refined tools that regimes leverage. Second, these are strategies that shift the focus from a limited set of high-ranking individuals within the military to the broader rank-in-file who are often necessary to support rebellion or revolution. Analyzing the underbelly of the institution provides a broad complement to the study of elite politics.

The analysis in this paper springs from a unique study of a reintegrated military institution in a single African country marked by ongoing conflict, and caution is well-warranted in generalizing from this case. Yet, the findings in this paper also speak to a broader set of political dynamics non-unique to the DRC. First, analyzing how regimes in weak institutional contexts develop novel screening technologies speaks to key questions about how leaders solve crucial organizational dilemmas in financially constrained contexts. Second, the spate of conflict experienced in Africa and other parts of the world has birthed a broad set of institutions composed of fragile coalitions that must be adeptly managed. Whereas the Congolese army may seem peculiar, it shares many of the same fundamental qualities as other institutions in developing countries. Lastly, while the explanation for civilian abuse is new, it is fundamentally caused by principal-agent problems that characterize many violent organizations. In this sense, this paper helps explain both current and historical patterns in both military and non-military institutions.

This paper makes several contributions to political science. First and foremost, this

study builds on a rich literature that examines the role of military institutions in society (Huntington, 1957; Feaver, 1996; Brooks, 2007; Acemoglu et al., 2010), and details a novel strategy used to solve a classic theoretical dilemma. It highlights the ways in which regimes manage military institutions to reduce coup-threat while staving off external challengers and in doing so, illustrates how the logic of political survival shapes strategic decisions that both maintain and undermine institutions (Bueno de Mesquita and Smith, 2012; Singh, 2014). Indeed, this paper demonstrates that the very strategies used to administer institutions responsible for establishing a legitimate monopoly on violence generates high levels of violence against individuals within the state (Weber, 1946).

Second, this paper builds on a growing literature that seeks to understand the challenges of building institutions in post-conflict, multi-ethnic societies (Call and Cousens, 2008; Del Castillo, 2008; Ghani and Lockhart, 2009). This paper shows that non-payment is not simply the product of bureaucratic mismanagement, but rather a screening strategy that allows regimes to effectively build loyal institutions. Indeed, many regimes inherit heterogeneous institutions in which the loyalty of civil servants is questioned. By detailing the internal strategies used to manage these challenges, these findings illuminate the 'blackbox' of how regimes overcome these problems and ultimately invest in institutions — a non-trivial contribution given that institutions are seen as key to state stability and economic development (Acemoglu et al., 2001; Rodrik et al., 2004). It does so by grounding questions about military dynamics classically housed in the study of international relations in an analysis of the domestic politics that shape institutions (Bueno de Mesquita and Smith, 2012). This process sheds light on the challenges and threats that post-conflict institutional reformers face, the diverse set of strategies that can be drawn on to manage them, and the downstream impacts they may cause.

Lastly, this paper contributes to a rich literature on the causes of civilian abuse and suggests that violence against civilians is the product of internal screening processes that are used to determine loyalty. While scholars have assessed patterns of civilian abuse as a function of territorial control (Kalyvas, 2006; Wood, 2010b), local disputes (Autesserre, 2010), and resource endowments (Weinstein, 2006), among other factors,[5] few have examined how violence is used to cultivate cohesion in the context of conflict. This work builds on a nascent line of research in political science that highlights the role of loyalty as both a cause

[5]Other commonly examined causes include the strategic dynamics between adversaries (Downes, 2008), among others, internal indiscipline (Humphreys and Weinstein, 2006), and regime type (Eck and Hultman, 2007).

and consequence of civilian abuse (Cohen, 2013). Moreover, analysis demonstrates that non-payment generates high levels of civilian abuse, which closely contrasts with arguments that contend fewer resources may restrain abuse by incentivizing soldiers to cooperate with local populations (Weinstein, 2006). Understanding the root causes of civilian abuse has been central to study of political science and these findings further this line of work.

This paper proceeds as follows. Section 2 provides a conceptual framework of how screening mechanisms are used to distinguish loyalty. Section 3 sketches a brief history of the Congolese army. I detail the qualitative and quantitative empirical approach and introduce the data in section 4. Section 5 integrates these approaches to analyze the relationship between payments, loyalty and violence. Section 6 considers alternative arguments that may explain the empirical patterns and discusses the generalizability of the analysis. Section 7 concludes.

2 Theory

While the guardianship dilemma is a problem that has plagued leaders old and new, this challenge springs from a broader family of principal-agent problems characterized by asymmetric information. In these settings, leaders must delegate the performance of a task to civil servants, yet are unsure how these agents will execute the performance of that task given variation in their quality. These models have a long history in political science given they characterize fundamental relations in institutional management (Baron and Meirowitz, 2006; Besley, 2007). Overcoming these challenges is particularly hard in fragile states where monitoring capacity is low and the rule of law weak, and as such, agents often seek to signal their true type through costly actions or leaders try to assess type through a screening process.

Given that most regimes don't fully forgo establishing a military, scholarship on the guardianship dilemma has explored the strategies that regimes use to overcome these principal-agent problems. Yet, few approaches leverage a screening model. With the notable exception of Egorov and Sonin (2011), who provide a model that analyzes the tradeoff between recruiting competent and loyal agents, most scholarship highlights indiscriminate strategies such as exclusionary recruiting (Louër, 2013), systematically under-equipping soldiers (Gaub, 2013), or creating conflicting chains of command (Quinlivan, 1999). However, strategies that leverage signaling or screening provide leaders increased precision in their ability to identity loyalty and offer a relatively effective solution to a classic dilemma.

Consider a simple screening game with two players, a regime and a soldier.[6] The regime seeks to maximize its survival and soldiers seek to retain their job in the army. The regime must recruit loyal soldiers for its army to maintain power. However, in the population of potential recruits, there are both loyal soldiers and untrustworthy soldiers, which is private information held by soldiers. Given that the regime cannot observe the true 'type' of each soldier, it must design a mechanism by which both soldier types will reveal their private information. In this set up, the regime moves first and sets up a screening mechanism and the informed player then selects a strategy to signal their type; if the mechanism is well-designed, investment into the signal is differentially costly for the soldiers in a way that is aligned with their true type.

While militaries often design recruitment exams to reveal soldier type, post-conflict regimes that inherit heterogeneous armies through reintegration processes must design alternative screening mechanisms. Here, I contend that regimes use non-payment as a screening mechanism. The regime can draw on one of two strategies: pay soldiers or withhold payment. Individual soldiers then decide whether to defect or stay in the military. Non-payment operates as a screening mechanism because loyal soldiers more easily weather these costly times and remain with the unit whereas uncommitted soldiers are ultimately unwilling to endure these trying times for the regime and defect. The critical assumption is that enduring periods of non-payment is positively correlated with loyalty. In the sequencing of play, after the regimes decides not to pay and soldiers decide whether to defect, payoffs are realized.[7] In an equilibrium in which it more costly for disloyal soldiers to remain, the regime is left with a pool of high-quality committed soldiers while those who are low-type depart.

In classic screening models, wage levels are a function of an individual's signals (alterable qualities) and indices (unalterable qualities) and individuals invest in these signals in expectation of a given wage schedule (Stiglitz and Weiss, 1990). Conceptualizing non-payment as a screening mechanism illuminates three points on the role of wage allocation. First, while theory and empirics suggest that increasing wages attracts better quality agents, this argument suggests the opposite as a reduction in wages attracts the type of agents that the regime desires (Bo et al., 2010). Second, while shocks of non-payment may alter average expected wages over time for soldiers, it is precisely because non-payment is periodic and infrequent that it has the ability to generate these signal-inducing environments. Lastly, a

[6] This stylized application derives from the classic structure of a screening game established by Rothschild and Stiglitz (1976), Spence (1973), and Akerlof (1970).

[7] The equilibrium concept for this type of game is a Weak Perfect Bayesian Equilibrium.

strategy of selective wage allocation can be thought of as a test of intrinsic motivation (Deci and Ryan, 1985; Benabou and Tirole, 2003). Broadly, loyalty can be cast as the depth of intrinsic motivation a soldier has for a regime and non-payment operates to reveal the extent of this motivation.

More specifically, loyalty can be conceptualized at two levels (Siebold, 2007).[8] At one level, loyalty reflects the willingness of soldiers to follow orders from commanding officers and support fellow soldiers (Olsthoorn, 2010). More deeply however, loyalty captures individual fidelity to the institutional structure that governs the state (Feaver, 1999). In states where there is little difference between the executive and military branch, cultivating loyalty to the military also means cultivating loyalty to the regime. Regimes seek to cultivate this type of loyalty to reduce the risk that soldiers launch a rebellion or coup.

In practice, reintegrated armies generate a set of unique contextual characteristics that shape the nature of the game, but do not fundamentally change its structure. Given that the Congolese army is the product of a negotiated settlement in which previously warring factions have been integrated under one unified command, the regime begins with a pool of soldiers under its leadership. This affects both sequencing and mechanism design. While regimes drawing on classic screening mechanisms may use entry-level tests or training to assess competency, loyalty or other relevant characteristics, reintegration impedes this approach by automatically consolidating all individuals into the armed forces.

Moreover, in the context of the Congolese army, all soldiers seek to signal their loyalty despite their true intentions. While some soldiers are motivated to signal loyalty simply in order to retain their job, an additional reason lies in military reintegration. One motivation for reintegrating adversarial factions is precisely because it allows groups to monitor the behavior of those they don't trust. This overcomes a fundamental security dilemma that often hinders negotiated settlements in which warring parties refuse to lay down their arms and submit to a military institution managed by their rival (Walter, 2002). As such, all soldiers signal their loyalty in order to maintain their position, which ultimately renders most signals cheap talk (Schelling, 1980).

This also sheds light on another core challenge in distinguishing loyalty in order to cultivate a reliable force. Regimes cannot solely identify and privilege elements of the armed group that brought them to power because that type of exclusion would provoke the same dynamics that may have caused the conflict in the first place. This means that even if

[8]While scholars of military sociology highlight four different levels at which soldier characteristics are cultivated, I focus on two for parsimony.

the regime believes that participation in their armed movement operates as a perfect index for screening, using this index may ultimately be self-destructive. Indeed, in the DRC, post-reintegration armed conflict highlights the over-use of this index in targeting. In 2012, members of the Congolese military launched the M23 rebellion in part due to the regime's favoritism of other soldiers in the army (Baaz and Verweijen, 2013). Here, it is important to note that the screening strategies I examine were those used in 2014 and 2015 and are in part a product of regime learning from this rebellion. While models often pre-suppose that optimal strategies are easy to a priori identify, in practice, they are often the product of mis-calculations and learning (Garfinkel and Skaperdas, 2000).

One crucial byproduct of withholding payments from soldiers is that this increases various forms of civilian abuse. A rich literature and history emphasizes the importance of wage incentives in both extortion and abuse:[9] Besley and McLaren (1993) model how various wage regimes generate lower or higher levels of corruption; Olken and Pande (2012) illustrate how wages determine the composition and quality of workers who enter civil service; Azam and Hoeffler (2002) demonstrate that soldiers violently loot as a substitute for missing funds; Wood (2010a) shows that rebels or state actors engage in civilian abuse when they lack the resources to provide selective benefits to cooperate.[10] Whereas the mechanisms through which these patterns emerge vary, the reduced-form relationship between wages and predation is surprisingly similar: reductions in wages generate abuse.

While the contention that non-payment generates civilian abuse resonates with these findings, a crucial difference is that non-payment is strategically used as a screening strategy. This underlying explanation departs from the extant literature on violence against civilians in two important ways. First, while financial resources have been central to explaining levels of violence across groups and conflicts (Wood, 2014), these arguments have largely analyzed resources as a pre-determined, time invariant endowment. My argument exploits within-organization variation and suggests that abuse is in part the result of the strategic management of resources used in the service of alternative organizational goals. In part, this may explain how temporary wage reductions induces predation in the short-term

[9] Following the approach provided by Olken and Pande (2012), these models broadly suppose an individual receives a wage w, that he will forgo if fired, upon which he receives an outside option v. Bureaucrats decide to predate or not and if so, they are detected with probability p; if they are not caught, he receives wage w in addition to the returns to predation b minus the cost to personal cost to predation d. In equilibrium: $w - v < \frac{1-p}{p}(b - d)$.

[10] A notable contrast to this argument suggests that violent organizations that are under-resourced may engage in restraint and cultivate non-abusive relationships with the civilians on whom they depend (Weinstein, 2006).

while longer-term resource scarity generates cooperation with civilian populations (Weinstein, 2006). Second, while scholarship on violence against civilians has leveraged principal-agent models to explain abuse, they tend to focus on the inability of principals to monitor and discipline their agents (Humphreys and Weinstein, 2006; Shapiro, 2013; Salehyan et al., 2014). As such, violence is cast as the result of abusive soldiers or rebels who cannot be restrained by an ineffectual leader. Here, however, violence is the byproduct of a test that is used by principals to assess the quality of their agents.

In this context, civilian abuse is also used to generate the very loyalty that regimes seek to distinguish. When units go unpaid, they are more likely to engage in predation, which is a collective experience that generates internal cohesion as well as increased identification with their unit and the army more broadly. Theoretical and empirical scholarship from a broad range of disciplines highlight how the process of participating in violence on behalf of a group increases collective identification with that group. Social psychology posits that this process may occur by providing individuals social incentives, making violence a normative behavior, or generating out-group hate (Littman and Paluck, 2015). Recent research in political science on the causes of sexual violence across conflicts demonstrates that wartime rape is deliberately used by rebel groups and state actors to cultivate in-group affinity (Cohen, 2013), which resonates with the broader role that violence has on socialization during war (Wood, 2008). And both classic and newer work on military analysis suggests more cohesive units are likely to engage in violence and that this can be a cyclical process (Shils and Janowitz, 1948; Grossman, 2009).

While the current literature largely forwards a linear relationship between abuse and loyalty, I focus on the interactive effect that not getting paid and engaging in violence has on loyalty. Non-payment generates abuse not only by inducing hardship but also by signaling to soldiers that they are being screened by the regime and that it is socially desirable to engage in abuse. Indeed, engaging in violence is tightly managed and engaging in it when appropriate is crucial for it to generate cohesion. The fact that violence generates the very characteristics that regimes seek to distinguish in the first place does not reduce the importance of that screening strategy. Rather, they are reinforcing processes. In this sense, loyalty is both an underlying 'type' as well as a quality that can be cultivated (this is akin to classic screening procedures in which firms select on educational investment but also invest in worker training).

Whereas engaging in violence may increase the in-group affinity associated with loyalty, it

may also increase loyalty by reducing exit options that soldiers have and therefore increasing dependency on the institution or regime. Exacting civilian abuse may make it more difficult for soldiers to return home if they face social sanctioning. Research from Sierra Leone, for example, suggests that previous participation in military abuse is one of the strongest barriers to effective post-conflict reintegration (Humphreys and Weinstein, 2007). If engaging in violence cultivates loyalty through these mechanisms, screening for loyal soldiers in the first place may ultimately generate a group of predatory soldiers as those who remain in the unit and predate will increase their dependence on the regime. This use of abuse is common to illicit organizations and gangs who often use violence as a test in initiation rituals to screen and induct new members (Anderson, 2000; Gambetta, 2009; Goldman et al., 2014). Conceptualizing loyalty as a reduction in exit-options achieved through violence illuminates the process through which cultivating loyal forces may ultimately generate predatory institutions.

3 A Brief History of the Congolese Army

Congolese independence in 1960 ushered in a dramatic restructuring of the Belgian-managed colonial army. Congolese, who were previously barred from holding the rank of officers, were integrated into management positions, trained and equipped. In the years that followed, education at the elite military academy in Kananga, the possibility of international training, and a consistently paid salary provided the military prestige and motivated many Congolese to join the army (Stearns, 2012). However, this moment in Congolese history was fleeting. Throughout the late 1970s and 80s, the army suffered the institutional cannibalization that afflicted the entire Congolese state under the reign of an increasingly kleptocratic and extractive regime (Prunier, 2011). President Mobutu crippled the army through a series of coup-proofing tactics in which he systematically under-funded and neglected the army, while investing in a small elite presidential guard of co-ethnics that ultimately held power (Roessler, 2011). In the face of an increasingly strong army, Mobutu solved the guardianship dilemma by completely gutting the army. As such, by the time the first Congolese war began in 1996, the AFDL — a 'rag-tag' rebellion led by Laurent Kabila and supported by Rwanda, Uganda and Angola — was able to easily overrun the Congolese army and depose Mobutu.

A mere two years after the first Congolese war ended, the second began. The poorly reconstituted army that Kabila created proved insufficient in defense and drove him to fund

proxy groups to fight on his behalf as well as accept sponsorship from a set of external patrons. In 2002, the Global and All Inclusive Agreement was signed, marking the parchment end of the conflict. The peace agreement mandated the integration of warring factions into a unified institution. The *brassage* (brewing) policy restructured the army into a new set of brigades and defense forces, divided powerful posts across rebel groups to ensure a set of checks and balances,[11] and aimed to retrain all soldiers to follow the same protocols and strive for national objectives (Stearns et al., 2013). The implementation of the brassage began in 2005 and, despite its partial fulfillment, drastically reshaped the current composition, incentives, and behavior of the army.

In practice, this policy resulted in the deep fragmentation of the army (Verweijen, 2014), which profoundly exacerbated the guardianship dilemma. It integrated adversaries with different motivations and goals into similar units, while allowing strong war-time groups to consolidate power in ethnic enclaves that facilitated defection and future rebellion. It also generated conflicting command structures between distrusting rebels and failed to provide proper and consistent training to soldiers, leading to problematic barriers in issues of cooperation and communication within and between units.

In addition to the classic challenges the guardianship dilemma poses, the Congolese Government has been forced to navigate this problem with forces whose very loyalty and commitment to the regime remain unknown. Moreover, following the formal end of the conflict in 2003, the Congo has experienced a set of armed rebellions driven both by local conflicts as well as foreign incursions (Reyntjens, 2009; Autesserre, 2012). A weak army that President Joseph Kabila hasn't been able to confidently empower has made him vulnerable to the same type of credible challenges that toppled previous Congolese regimes (Lemarchand, 2012).

Within this context, the Congolese regime has drawn on both classic approaches to solving the guardianship as well as novel ones. The regime has shuffled, sacked, and assassinated military commanders who pose internal threats, cultivated multiple chains of command, and established units that report directly to the government.[12] As demonstrated below, the government has also used non-payment as a unique strategy to discriminate between those loyal to the army and regime and those who are not. Moreover, this process has generated substantial levels of violence against civilians. While members of the FARDC are notoriously

[11] Senior posts across the army were divided among factions and senior posts also required that commanders were deputized by individuals from different warring factions.

[12] The Republican Guard operates as a semi-autonomous force that is primarily responsive to the executive.

responsible for predation ranging from petty extortion to brutal human rights violations that are often associated with a lack of payments (Amnesty International, 2007; Human Rights Watch, 2009; Baaz and Stern, 2008), these two facts have never been understood as a deliberate strategy used by the government to manage the guardianship dilemma. In this sense, while the Congolese Army has been cast as a haphazard institution plagued by violence and bureaucratic mismanagement, an underlying logic used to address a historical dilemma faced by all leaders explain these empirical observations.

4 Data and Empirical Approach

4.1 Qualitative Data

Over the course of 2014 and 2015, I conducted 100 in-depth interviews with members of the armed forces, civilians, government officials, and security sector reform experts in the DRC. Interviews were fielded throughout North and South Kivu to capture a range of variation in conflict exposure and civil-military relations. Interviews were semi-structured, and two enumerators were trained in qualitative methods to participate in the process as translators. The primary goal of the qualitative component was twofold. First, the qualitative surveys were used to illuminate the process and mechanisms by which the core variables of payments, loyalty and violence are connected. Second, they were used to define accurate measures to be deployed in the quantitative component of this research. Or, following the typology of mixed-methods that Humphreys and Jacobs (2015) provide, they were used to shed light on distinct questions and distinct measurement strategies.

During initial interviews that were used to build theory, soldiers openly discussed the organization and structure of violence and payments and its relationship to loyalty. All respondents were quick to suggest that they were “forced" to predate when they went unpaid and many self-identified as “victims” of the military hierarchy. Interestingly, this perspective was shared by civilians. One civilian interviewee sympathetically expressed that while life is hard for all Congolese, it’s particularly harsh for soldiers.[13] However, soldiers were also keen to cast their ability to weather times of non-payment as a source of national pride, irrespective of the violence in which they engaged. Implicitly comparing their endurance to those who had defected, active members were proud of their patriotism. This multi-faceted relationship — one of both anguish and pride — was common to the narratives shared and

[13] Interview with civilian in South Kivu, 2014.

began to reveal a deeper dynamic in which these were connected through an underlying process of screening.

Qualitative interviews similarly helped refine the measurement strategy and relevant parameters for a future closed-form survey in three ways. First, it illuminated the conditions under which soldiers were willing to openly discuss predation. For example, while soldiers would not directly discuss violence they had committed, they were relatively open about discussing violence when it was attributed to their unit. Second, it revealed which forms of predation were taboo to discuss. For instance, while soldiers were open to discussing sexual violence committed against women, they refused to talk about sexual violence committed against men despite evidence that this is a widespread phenomenon in the DRC (Johnson et al., 2010). Third, these interviews were used to examine the relevant time frame over which to analyze payment histories and assess the historical extent to which soldiers could remember their own payment histories and behavior.

4.2 Quantitative Data

4.2.1 Soldier Survey

To further analyze the dynamics of this screening process, I fielded a closed-form survey of 350 members of the FARDC in the spring of 2015. I sampled soldiers in the provincial capital of North Kivu, Goma, for three reasons. First, Goma is the operational headquarters for the Congolese Army in the Eastern DRC through which soldiers are deployed from other areas of the country to conduct missions and through which they return after completing missions. As such, a sample of soldiers positioned in Goma at any given moment draws on a broad cross-section of Congolese soldiers operating in this region. Second, this theater is the epicenter of the ongoing conflict in the Eastern Congo. Therefore, soldiers deployed in North Kivu are those the regime must place the most trust in as they safeguard the homeland from external threat. Third, soldiers operating in this region are engaged in high levels of combat and often charged with civilian abuse. Together, this sampling site ensures diversity and combat exposure at the regional level among a set of soldiers the regime must entrust.

While I provide the first quantitative data on a notoriously abusive and inaccessible military currently engaged in conflict, a set of four key challenges must be highlighted. First, I drew a convenience sample of soldiers using snowballing techniques.[14] The core

[14]To the best of enumerator ability, soldiers were selected to over-sample active rank-and-file elements

limitation of this approach is that it generates a non-probability sample that may not be representative of the underlying population (Groves et al., 2011). Convenience samples are typically used to access hard-to-reach populations. At the time the survey was launched, the Congolese regime had restricted all access to the army by outsiders and promoted generals responsible for mass atrocities so that international organizations prohibited from working with those charged with war crimes could no longer collaborate with the military; indeed, the Congolese general who first granted authorization for this project during fieldwork in 2014 was assassinated by the time the survey was launched in 2015. Shifting political winds, coupled with the fact that militaries are notoriously secretive for reasons of national security and averse to questions of human rights violations, prompted this sampling strategy. While this approach resulted in a diverse sample on key unit-level characteristics (see table 1 for descriptive statistics), quantifying the extent of divergence from the underlying population without a sampling frame is difficult. As such, I treat the sample I draw on as exploratory and non-representative and cast the analysis I forward as a first step in corroborating the theory presented in this paper.

A second challenge is that the underlying 'legibility' of the army structure complicates identifying a common unit of analysis. The reintegration process resulted in a muddled organizational structure in which commanding officers and soldiers from various rebels groups draw on different repertoires of bureaucratic management; unit sizes vary with commanding officers of different rank and soldiers have little knowledge of the organization. As a result, while interviews generated information on unit-level information, soldiers were unable to provide unique identifiers about their unit such as a unit name or number. While I attempted to collect the names of commanding officers to connect unit-level information, respondents felt uncomfortable providing this information and I was therefore unable to collect these types of identifiers for analysis. Consequently, I am unable to identify whether respondents hail from the same unit. To ensure that interviewed soldiers provided information on the same type of unit, enumerators worked with respondents to define and identify platoons (*peloton*). As such, soldiers operate as a set of expert respondents who provide information on unit-level behavior. Analysis takes place at the individual-level but generally captures unit-level characteristics and phenomena. To assess the impact of this asymmetry, I re-run all analysis clustering at the regiment level, which is a higher, nested unit-of-analysis that

of the land forces from a variety of units. This survey excludes members of the Republic Guard, a semi-autonomous branch of the army cultivated by the executive office as a special unit to directly protect the president's interests.

soldiers were able to report and results remain robust.[15] In a deeper sense, this highlights a tension in understanding weak institutions in conflict-affected states: institutions that are illegible and messy are often sufficiently well-run to facilitate the selective targeting of goods.

Third, interviews with soldiers who perpetrated violence are the primary source of data on civilian abuse and eliciting truthful responses about sensitive information remains a key challenge to generating accurate data on conflict and violence (Blair, 2014; Blair et al., 2014). A series of strategies was used to elicit truthfulness in this survey. Questions that were particularly sensitive focused on unit-level behavior rather than individual behavior, creating an additional layer of anonymity that may have reduced incentives to misrepresent information. Additionally, while the survey asked questions about extortion and violence, it did not ask about severe infractions involving military elites such as mineral extraction, collusion with rebel groups, and the arms trade in which the FARDC is involved.[16] Lastly, interviews were conducted privately by Congolese enumerators trained in sensitive survey techniques and respondents were guaranteed confidentiality.[17] Importantly, general impunity for civilian abuse has muted incentives to fabricate information and the normalization of violence against civilians has mitigated the impact of social desirability bias to misrepresent histories. As one member of the FARDC mockingly responded when asked why he shared information about violence committed by his unit, "what will happen if I do?"[18]

Fourth, a key concern is collecting precise retrospective data that minimizes recall bias. A series of steps was taken to improve the credibility of the data, assess the magnitude and nature of the measurement error, and validate the data. First, in the quantitative soldier survey, data on payments and violence were collected through a broad retrospective cross-section of the past six months, a month-to-month panel, and a survey experiment. The time-frame was selected through piloting to reduce measurement error and ensure that no changes to the payment structure were implemented. These three different forms of

[15] This approach does not directly correspond to the correct level of clustering, but employs a conservative version. The significance of results remain unchanged across all specifications except for the relationship between non-payment and defection for which significance marginally drops just below the p=.1 threshold. While I am unable to provide an estimate of the number of unit clusters, there are roughly 40 regiments, which can be interpreted as a basement estimate for the number of units. Results are not reported.

[16] FARDC implication in these severe forms of violence and predation are well documented by the United Nations and human rights organizations. For a non-comprehensive review, see United Nations Security Council (2001) United Nations Security Council (2008), United Nations Security Council (2009), United Nations Security Council (2010).

[17] The fact that soldiers were interviewed in Goma where most were temporarily passing through may have also improved the truthfulness of responses as there would be little concern that respondents would encounter enumerators again.

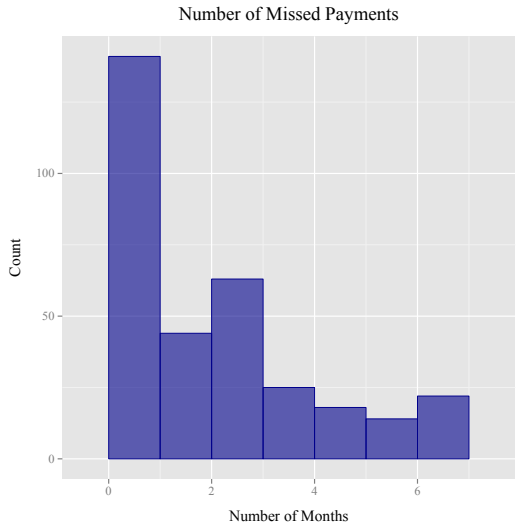
[18] Interview with FARDC in North Kivu, 2014.

data collection provide internal validity checks and facilitate analyzing measurement error. Additionally, to improve recollection for the panel, a set of historical cues unique to each month were developed and used by enumerators during the survey (de Nicola and Gine, 2014). These cues were developed in conjunction with members of the FARDC and reflect military-specific events familiar to soldiers. Table 11 in appendix A enumerates the historical cues used during the survey.

4.2.2 Measurement Strategy & Descriptive Statistics

To analyze how the Congolese regime uses non-payment as a strategy to distinguish commitment that also results in defection, violence, and loyalty, I draw on a series of measures that capture each of these phenomena. To assess how payments are used as a technology of discrimination, I collect data on whether soldiers received their monthly wages for six months preceding the survey. Figure 1 visualizes the number of months during this time frame for which soldiers did not receive their salary. Only 40% of soldiers consistently received wages over the six-month period and soldiers averaged missing 1.59 (SD = 1.86) months of salary over the window.

Figure 1: The Frequency of Missing Payments



Note: This plot visualizes the number of months soldiers reported not receiving their salary over the past 6 months.

Analyzing how the government uses non-payment to distinguish loyalty requires that the regime targets specific units with wages. To understand the logic of strategic payment targeting, I draw on and operationalize four salient cleavages within the Congolese army and Congolese society more broadly. I first operationalize whether units are co-ethnic with the regime; presidential co-ethnicity is a binary variable that takes a 1 if the soldier comes from the same group as the president. Second, I draw on whether units are Banyamulenge or ethnic Rwandans, a marginalized group in the DRC. I differentiate between these two ethnic groups because one is historically privileged and the other historically discriminated against. Third, I draw on the ex-rebel status of units which captures whether soldiers participated in previous armed insurrections; ex-rebel is a binary variable that takes a 1 if a soldier belonged to a rebel group prior to joining the military. Lastly, I operationalize a measure of authority to capture "big-man" politics that dominates Congolese society and rank of soldiers.

I operationalize two broad families of predation: extortion and violence against civilians. While extortion and abuse similarly cause harm, I define them as two analytically distinct categories. Extortion includes stealing a civilian's goods, illegally taxing a civilian (either at a roadblock or at a private home), or forcing a civilian to perform labor (such as carrying army supplies). Moreover, I distinguish extortion from other revenue-generating activities by its coercive nature. For example, revenue-generating activities may include providing dispute resolution services or engaging in small trade, while extortion includes levying illegal taxes. Violence against civilians includes illegally detaining a civilian, torturing a civilian, or sexual abusing a civilian.[19] Following Anderson (2008), I construct mean effects indices for each family of predation.

This classification departs from recent treatments of civilian abuse that aggregate various types of predation for two reasons (Humphreys and Weinstein, 2006). First, separating the two families provides additional leverage to rule out the mechanisms through which non-payment works: if non-payment only increases violence but not extortion, this may suggest motivations beyond alternative arguments such as survival. Distinguishing these families of predation illuminates potentially rival explanations for violence that aggregation may mask. Second, this approach responds to calls for disaggregation in the study of violence in order to more clearly analyze the micro-dynamics of conflict.

To operationalize defection, I create a binary variable for whether soldiers within a unit defected over the relevant time frame. Defection refers to soldiers who have left units, either

[19]While sexual violence is broad and complex, I operationalize it as rape against women. This by no means is exhaustive or nuanced, but rather a clear and salient form of violence.

voluntarily or by force. While I am unable to disaggregate these two types of defection, qualitative interviews with active soldiers suggest that the vast majority of defection occurs voluntarily. Defection by force captures situations in which commanding officers eject soldiers. Note that this measure does not seek to distinguish between soldiers who have left and returned home or soldiers who have left the army to join adversaries, though this may be a possibility. Lastly, to capture loyalty, I use reported opinions about how prideful soldiers feel about their units and the FARDC on a 1-4 scale where 4 is positive. These measures provide insight into how different behavior generates allegiance and devotion to the group. One concern about these measures is whether they reflect true beliefs or preference falsification that may be driven by fear of reporting. Here, I buttress these measures with qualitative evidence to ensure these capture loyalty. Lastly, I draw on measures of army sanctioning in the conclusion to interrogate alternative mechanisms that may explain abuse and operationalize this as whether the military hierarchy directly sanctioned individuals within a unit.

In soldier interviews, I collected a subset of measures by month for the previous six months as well as a subset of measures for the full six-month period that were not broken down by month. Both sets of questions were answered by all respondents in one sitting. While the month-to-month panel provides more refined data over a series of select measures, the cross-section offers an aggregate view over a more expansive set of measures. Drawing on both sets of measures provides a within-subject approach that can be used to assess measurement error. This design choice was primarily due to logistical constraints as soldiers were unwilling to spend the time responding to a survey in which each measure was recorded by month. The 'source' of the data is specified when reported throughout the analysis. Table 1 presents descriptive statistics for these measures. Appendix B details the survey questions used for these measures.

4.3 Estimation Strategy

My empirical analysis proceeds in four steps. I first analyze which units are paid in which month to establish the strategic targeting of non-payment. I then demonstrate that non-payments are associated with higher levels of defection. Third, I establish that non-payment is associated with higher levels of extortion and civilian abuse. Lastly, I show that units who are not paid and engage in violence exhibit higher levels of loyalty than their counterparts. In each of these steps, I estimate the following model:

Table 1: Descriptive Statistics

Var	Min	Max	Mean	SD	N
Rank	0	18	6.35	3.80	338
Ethnic Rwandan	0	1	0.06	0.23	326
Presidential Co-ethnic	0	1	0.10	0.30	344
Ex-rebel	0	1	0.29	0.45	337
Missing Payments	0	6	1.59	1.86	327
Defection	0	1	0.29	0.45	325
Extortion	0	1	0.22	0.41	341
Illegal Taxation	0	1	0.31	0.46	341
Forced Labor	0	1	0.34	0.47	338
Forced Detention	0	1	0.40	0.49	339
Torture	0	1	0.22	0.41	331
Sexual Violence	0	1	0.14	0.34	324
Unit Pride	1	4	3.26	0.87	342
FARDC Pride	1	4	3.21	0.94	336
Military Sanction	0	1	0.51	0.50	338

Note: This table presents summary statistics for the cross-sectional data. The variables associated with the extortion and violence families are used to construct a means effect index respectively.

$$Y_i = \alpha_i + \beta_1 \mathbf{S}_i + \varepsilon_i$$

where Y captures the relevant dependent variable, S_i is a vector of unit-level covariates that capture theoretical quantities of interest, and ε_i is the error. All models are estimated using ordinary least squares.

In analyzing these core dynamics, a set of challenges threaten unbiased estimation. First, the analysis I provide is fundamentally endogenous. Indeed, I argue that payments are strategically allocated and do not follow a random logic. In examining the relationship between non-payment and violence, I include the covariates that predict non-payment in estimation to approximate conditional unconfoundedness. One mitigating factor is that the characteristics over which targeting occurs are time invariant pre-treatment characteristics, which tempers concern over introducing post-treatment bias into estimation (Angrist and Pischke, 2008).

Second, bias may also be introduced through imprecision in recall. Specifically, if reporting error is systematically correlated with the key treatment variable — in this case, if error is correlated with non-payment when estimating violence — coefficients may be biased. To assess the extent of bias, I use internal validation techniques to analyze measurement error in appendix D. Third, concerns about reverse causality arise. Throughout the analysis, I draw

on qualitative evidence, and where available quantitative data, to rule out these concerns. I explicitly consider alternative arguments that may explain similar empirical patterns in section 6.3.

5 Results

5.1 The Logic of Selective Payments

Leadership in the Congolese military is charged with distributing monthly payments and rations to 144,000 active soldiers. The Congolese army is divided into regional divisions, and within each regional division, a command structure oversees administration. Soldiers within each region are entitled to the same official monthly payment by rank as well as a small quantity of rations. The average monthly salary of rank-and-file members of the FARDC is 85 USD and soldiers typically receive one “goblet" of rice per month. Table 13 in appendix C enumerates the official monthly salary by rank for members of the Congolese army. As evidenced above, payment delivery is irregular. Soldier expectations are in line with this inconsistency. Of the soldiers interviewed, 37% of soldiers have little or no confidence that payments will be delivered in full or on time and only 32% of soldiers are highly confident that they will consistently receive their salary. This section unpacks the behavior behind these expectations and evidences the strategic allocation of non-payment by unit type as the first step in the screening process.

The bureaucratic structure of payment allocation highlights who makes key decisions about payment targeting at various points during the process. At the first node, the central government makes monthly transfers to provincial commands; however, these transfers fail to provide salaries for all active soldiers. In an interview with a senior administrative official in North Kivu, he confirmed that the regime, rarely, if ever transfers sufficient funds for full payment.[20] While the central government determines how much to send each province, the more relevant targeting occurs at the provincial level as they must decide how to distribute limited funds among units operating in their region. Provincial level administrators work with region-specific Chefs de Bureau du Comptabilités (CBCs), who are responsible for delivering and tracking payments to all soldiers, to determine how to allocate wages.[21] Payments

[20] Interviews with FARDC in North Kivu, 2014 and 2015.

[21] CBCs are the equivalent of runners and take on the risky, and sometimes lucrative, job of distributing payments to soldiers. At the beginning of every month CBCs return from various field locations to provincial capitals to collect large sums of money for distribution; despite the fact that monthly payments are small, a weak currency makes monthly payments bulky.

are delivered by CBCs directly to battalion leaders who distribute money internally.[22]

In practice, decision-making occurs at the beginning of each month when cash is transferred directly to the provincial headquarters and then distributed to the CBCs.[23] Within regions, payment targeting occurs at the unit level. The poorly implemented process of reintegration that occurred in the Congolese army preserved highly segregated units in which dominant characteristics are common knowledge within the military hierarchy. For example, certain units are known as predominantly comprised of ex-combatants from a previous rebel group, while others are known as units hailing from the same geography and tribe as the president.[24] Using these unit-level characteristics, cash constrained provincial leaders must strategically allocate payments, but must do so carefully as they want to generate defection through non-payment but not so much that it fosters rebellion.

Ultimately, this creates incentives to allocate non-payments *across* types of units, spreading out the burden of non-payment while allowing *within* unit-level dynamics to reveal who is indeed loyal. To examine whether these patterns exist, I analyze how non-payment is allocated over time. Table 2 presents monthly payment targeting; the final column aggregates over the periods.

Beginning in December of the survey period, units are differentially paid by month: in December, units with high-ranking commanders are systematically paid less;[25] in January, units that are presidential co-ethnics are paid substantially less; in February, units that are predominantly ethnic Rwandans forgo payments; and in March, units comprised of ex-rebels are systematically paid more. While the results are marginally statistically significant, they highlight a rotating system of non-payment in which the regime strategically allocates non-payment by month by unit type.

Three interesting trends emerge in the analysis. First, in the months preceding December, there are no differential effects. One plausible explanation for no targeting during October and November may be that there were sufficient resources distributed at the province level; these results only capture within-province variation. This suggests that a strategy

[22]The army has also launched a process of *bancarization*, in which payments are made electronically to individual soldiers; however, it has yet to be rolled out consistently through the DRC and at the time of this study, approximately 6% of soldiers in North Kivu had been formally enrolled in the program.

[23]During April, I observed a large block of cash about 6 feet by 10 feet delivered to the provincial headquarters and distributed accordingly.

[24]The logic of targeting units by an index does not require that cleavages based on identity are used and the same predictions would hold if the military used unit identifiers or other information for this process. In the Congolese army, these are the relevant cleavages that the army uses in categorization.

[25]It's important to note that not all units are commanded by officers of the same rank as would be standard in other militaries. As such, rank is rather relevant.

Table 2: Payment Targeting by Unit Type

	Month to Month Non-Payments						
	(Oct)	(Nov)	(Dec)	(Jan)	(Feb)	(Mar)	(All)
Intercept	0.899***	0.820***	0.919***	0.891***	0.879***	0.760***	0.861***
	(0.035)	(0.042)	(0.038)	(0.038)	(0.034)	(0.050)	(0.022)
Rank	0.001	0.005	−0.008*	0.001	0.007	−0.004	0.0002
	(0.005)	(0.006)	(0.005)	(0.005)	(0.004)	(0.007)	(0.003)
Co-ethnic	−0.059	−0.078	0.042	−0.114*	−0.016	−0.069	−0.049
	(0.056)	(0.068)	(0.062)	(0.061)	(0.055)	(0.081)	(0.036)
Rwandan	0.102	−0.035	0.015	−0.059	−0.193***	−0.087	−0.043
	(0.075)	(0.090)	(0.083)	(0.082)	(0.073)	(0.107)	(0.048)
Ex-rebel	−0.009	0.022	0.013	−0.006	−0.010	0.102*	0.019
	(0.038)	(0.046)	(0.042)	(0.041)	(0.037)	(0.054)	(0.024)
Observations	315	315	315	315	315	315	315
R^2	0.010	0.007	0.010	0.012	0.031	0.015	0.009

Note: Models are estimated using ordinary least squares. Month-to-month panel data are used for estimation. * significant at $p < .10$; **$p < .05$; ***$p < .01$.

of non-payment might not always be in use, but selectively employed from time to time. Second, while non-payment is the general experience, in March, ex-rebel units are systematically over-paid. Indeed, while the general screening mechanism discussed in this paper leverages non-payment, this falls within a broader family of differential payment allocation. Third, identifying selective targeting requires disaggregating the data by month. The final column in the table, which aggregates over all months, masks the differential effects that emerge with the more refined monthly analysis. This highlights that selective targeting occurs at the unit- and month-level.

These results are generally consistent with a strategy in which leadership targets specific types of groups over time for non-payment and spreads non-payment out by month. As one official with the European Union mission to provide assistance for security sector reform (EUSEC) stated, "payments sporadically affect 20% of soldiers" at any given time such that, "the problem does not exist at the same time, for all soldiers."[26] One challenge in assessing a theory of 'optimal allocation' is that many trends may seem to ex-post fit this argument, making it difficult to falsify. Here, however, the results clearly demonstrate that payments rotate frequently by unit-type: each month, different unit types experience relatively higher or lower payments.

This strategy provides an ample way to spread risk of mutiny or rebellion between units by reducing incentives for cross-cleavage mobilization. However, it simultaneously

[26]Interview with EUSEC official in North Kivu, 2015.

allows non-payments to serve a deeper function of distinguishing between committed and uncommitted soldiers within units. Interviews with high ranking military officials reveal as much. Officials charged with financial allocation highlighted the importance of using money to induce hardship among soldiers as a test of their loyalty as well as forms of defection. Indeed, as one senior official claimed when asked about the impact of non-payment: "we'll see who's left."[27] Generating forms of trial and tribulation to identify loyalty and make sure that soldiers were "true patriots" was a key concern aired by all officials. Interestingly, officials were unconcerned that non-payment may drive talented individuals to defect, leaving the army with a pool of poor-quality soldiers who had relatively worse outside options. Given that the army sought to maintain soldiers committed to the regime, this may suggest that loyalty and talent are not positively correlated.

Moreover, given the lack of training or initial recruitment exams, officials were keen to identify alternative screening mechanisms. It is important to note that non-payment as a screening mechanism largely emerged due to a lack of other effective mechanisms. Training programs and recruitment exams require large capital investments unavailable to the Congolese army while leveraging non-payment transforms endemic financial constraints into a useful strategy. By spreading non-payment across unit types, the regime is able to both solve a fundamental financial constraint without generating too much risk. The next section analyzes whether non-payment generates defection and brings in voices from the rank-and-file to further evidence this process.

5.2 Payments & Defection

For non-payments to operate as a technology that distinguishes the committed from the uncommitted within units, they must generate sufficiently difficult times to ultimately drive those who are not loyal to defect. This section documents that missing payments are associated with increases in defection and that weathering times of non-payment is understood as a test of loyalty.

As demonstrated above, non-payments rotate quickly and expectations among the soldiers interviewed are aligned with this system. One reason that monthly shocks are severe and weathering them a sign of costly commitment is because soldiers have very little savings that would enable them to smooth consumption over these periods. Repeatedly, soldiers claimed they had little to no savings and would survive month-to-month. Multiple respon-

[27] Interviews with FARDC in North Kivu, 2014 and 2015.

dents reported that even when they were paid, they would often have to pawn their cell phone by the middle of the month in order to make ends meet.[28] As such, those willing to weather times of non-payment remained and those unwilling to burden these challenges defected.

In general, defection takes a few forms. Most often, soldiers described defection as a simple choice: they could and would simply leave the unit. In more severe situations, individuals deemed untrustworthy would be forcefully discharged by commanding officers (see the vignette in section 5.3 as an illustrative example). Individuals who defect are identified by the regime, struck from the payroll, and generally cast as untrustworthy. Indeed, those unable to weather challenging times are fundamentally ignored by the regime. In an interview in the provincial capital of Goma, one soldier recounted that after forgoing payment for two months, he left his unit to return to the city and attempted to collect payment yet was consistently ignored and taunted by all military officials.[29]

It is in the way that soldiers interpret and understand non-payment that buttresses it as a screening process. While I primarily draw on data from active soldiers rather than those who did defect, soldiers described periods of non-payment as 'trials'. Indeed, many soldiers saw the ability to persevere through these "tests of patriotism" as signals of their commitment. While all soldiers complained about the fact that they weren't paid, they understood this to be one of the core challenges they faced in making it as a soldier. This is where the core logic of strategic non-payment rests: it provides the ability to distinguish those who are committed to the army and its cause from those who are not. To provide more formal evidence, table 3 analyzes the relationship between missing payments and defection and figure 2 visualizes the least-squares fit controlling for a battery of pre-treatment variables. Analysis shows that non-payments are positively correlated with defection, a relationship which strengthens when controls are included. The impact is non-trivial: when a unit misses a single month of payment, they experience a 10% increase in defection.

It is important to note that not all soldiers remain for reasons of loyalty. Indeed, the relative wages of soldiers are fairly strong and few outside opportunities exist. While the average soldier makes only 85 USD per month, which provides an annual salary of 1,020 USD, this is more than twice than the gross national income per capita of 410 USD (World Bank Group, 2014b). Multiple survey respondents despaired that while their situation was

[28] Interviews with FARDC in North Kivu 2015.
[29] Interviews with FARDC in South Kivu and North Kivu, 2015.

Table 3: Missing Payments & Defection

	Defection	
	(1)	(2)
Constant	0.246***	0.084
	(0.033)	(0.192)
Missing Payments	0.019	0.024*
	(0.013)	(0.014)
Controls		✓
Observations	317	289
R^2	0.007	0.034

Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; ** $p < .05$; *** $p < .01$.

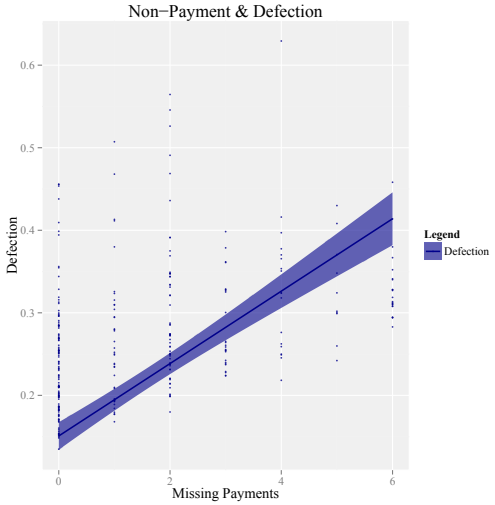


Figure 2: Missing Payments & Defection

dire, there were no other opportunities for them to take.[30] Alternatively, soldiers may have remained for aspirational purposes and in hope of greater access to the goods associated with authority (Verweijen, 2013).

It is similarly important to note that in no interview with senior or mid-ranking officials did respondents suggest that units would not be paid as a punishment for any defection that took place. While I do not have monthly panel data on defection and payment to formally test this proposition, qualitative evidence tempers concerns over reverse causality.

These results also beg the question of whether non-payments separate the loyal from the disloyal or the more dubiously operates to retain those with fewer exit options. Given that better exit options likely correlate with greater opportunity, assets, or competency, defection may ultimately reduce the overall competency of the military. However, the language soldiers use to describe periods of non-payment resonates with notions of commitment to a greater good or nation. This suggests that those who are intrinsically motivated by the idea of service and state are more likely to stay. Second, the regime may be indifferent to competent soldiers leaving if they ultimately prize loyalty. It may be a preferable outcome if those with better exit options leave, resulting in a less competent, but loyal body.

It is important to note that this study was conducted after reintegration policies had been implemented and at a point in which surveyed soldiers were aware of non-payment.

[30] Interviews with FARDC in South Kivu and North Kivu, 2014 and 2015.

As such, much of the screening I examine may have occurred prior to the launch of the survey. This may introduce sample selection into estimation. The key implication is that the estimates from this survey are valid to the time frame examined. However, this selection bias also suggests that the analysis conducted is a hard test of the relationship between non-payment and defection if those who stay are indeed the most loyal. This requires that the effect of non-payment on loyalty is linear.

In this section, I documented that non-payment between units generates defection within units. Importantly, periods of non-payment are seen as trials of commitment to the nation and broader nation-building project remain. This functionally allows non-payments to serve as a technology that the regime uses to discriminate between the committed and uncommitted.

5.3 Civilian Abuse

The tragic implication of using non-payment as a screening strategy to identify loyal soldiers is that unpaid units are substantially more likely to engage in higher levels of extortion and violence against civilian. While these forms of predation are largely the byproduct of screening for loyalty, suggestive evidence from qualitative interviews highlights that violence plays a similar role in screening out disloyal soldiers. In this section, I profile the nature of civilian abuse committed by the Congolese army, establish that non-payment is associated with extortion and violence against civilians, and analyze evidence about the mechanisms through which violence occurs.

The Congolese army is notoriously responsible for high levels of violence and extortion. Data from ACLED (Raleigh et al., 2010), which provides a broader overview of abuse than my dataset, underscore the extent of violence meted out by the Congolese army: on average there are 2.78 acts of violence against civilians attributed to the army each month between 1996 to 2014, which result in an average of 15.27 casualties per event.[31] Researchers and activists alike have documented similar trends (Stearns et al., 2013) and certain studies have even found that the military is responsible for comparatively more violence than armed groups operating in the Eastern DRC (Van der Windt and Humphreys, 2014). Of the soldiers I interviewed, between 22% and 34% report engaging in some type of extortion, including theft, illegal taxation, or forced labor, and between 14% and 40% report engaging in some

[31] They are likely an underestimate of overall abuse as they do not include instances of extortion or violence against civilians that were not were not severe enough to receive media attention, nor do they include events for which attribution to an actor was unclear.

sort of violence against civilians, including detention, torture, or sexual violence.

A few notes are in order about the type of civilian abuse analyzed here. First, violence is rarely used to suppress dissent in order to further regime interests. While the Congolese regime is only democratic in name, its authoritarian tendencies are easily implemented given the lack of an effective opposition and the particular irrelevance of the state in the eastern part of the country. As such, rarely is violence exacted on the order of high-ranking authorities to further a political agenda. Second, despite ongoing conflict in the Kivus, little violence is the direct result of adversarial battles. Instead of engaging in direct violence, the Congolese army and many rebel groups softly collude given that these arrangements generate more stable and productive territories to govern. In an interview with a soldier freshly returned from deployment, for example, the respondent claimed his unit had been drinking beers with the adversaries they were sent to fight.[32]

The organization of abuse, however, speaks to its causes. In interviews with soldiers, respondents underscored that extortion and violence are organized by unit-level commanders and implemented by the unit. Soldiers reported they would face punishment if they were found to engage in extortion or violence without the permission of the unit commander. While these responses may have been an attempt to shift the burden of responsibility, the consistency and commonality in responses suggest otherwise. Respondents highlighted that commanders would organize these processes, which would include identifying when and where illegal barriers would be constructed as well as when and how more serious forms of extortion and violence would happen. Unit commanders would often not participate in the actual work. Rather, this was delegated to low-level rank-and-file soldiers in the unit. Delegation to these soldiers would allow unit commanders to both monitor and, in certain cases, test newer soldiers.

To formally assess the relationship between wages and predation, I estimate the effect of non-payment on a set of measures that capture low levels of extortion as well as more severe forms of violence. Tables 4 and 5 report results and figure 3 visualizes these relationships.[33]

[32] Interview with FARDC in North Kivu, 2015.

[33] In these regressions, I use measures of missing payments and violence that occurred over the previous six months. Appendix D assesses the measurement error for month-to-month reports of missing payments compared to aggregate reports over the previous 6 months and provides analysis that suggests the error is classically distributed.

Table 4: The Impact of Non-Payment on Extortion

	Theft		Taxation		Forced Labor		Index	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	0.149^{***}	0.072	0.259^{***}	0.263^{***}	0.279^{***}	0.187^{***}	-0.143^{**}	-0.262^{**}
	(0.030)	(0.055)	(0.034)	(0.063)	(0.035)	(0.064)	(0.061)	(0.113)
Missing Payments	0.046^{***}	0.049^{***}	0.036^{**}	0.035^{**}	0.042^{***}	0.052^{***}	0.093^{***}	0.098^{***}
	(0.012)	(0.013)	(0.014)	(0.014)	(0.014)	(0.015)	(0.025)	(0.026)
Controls		✓		✓		✓		✓
Observations	322	299	323	299	321	298	327	303
R^2	0.041	0.078	0.020	0.049	0.027	0.054	0.041	0.078

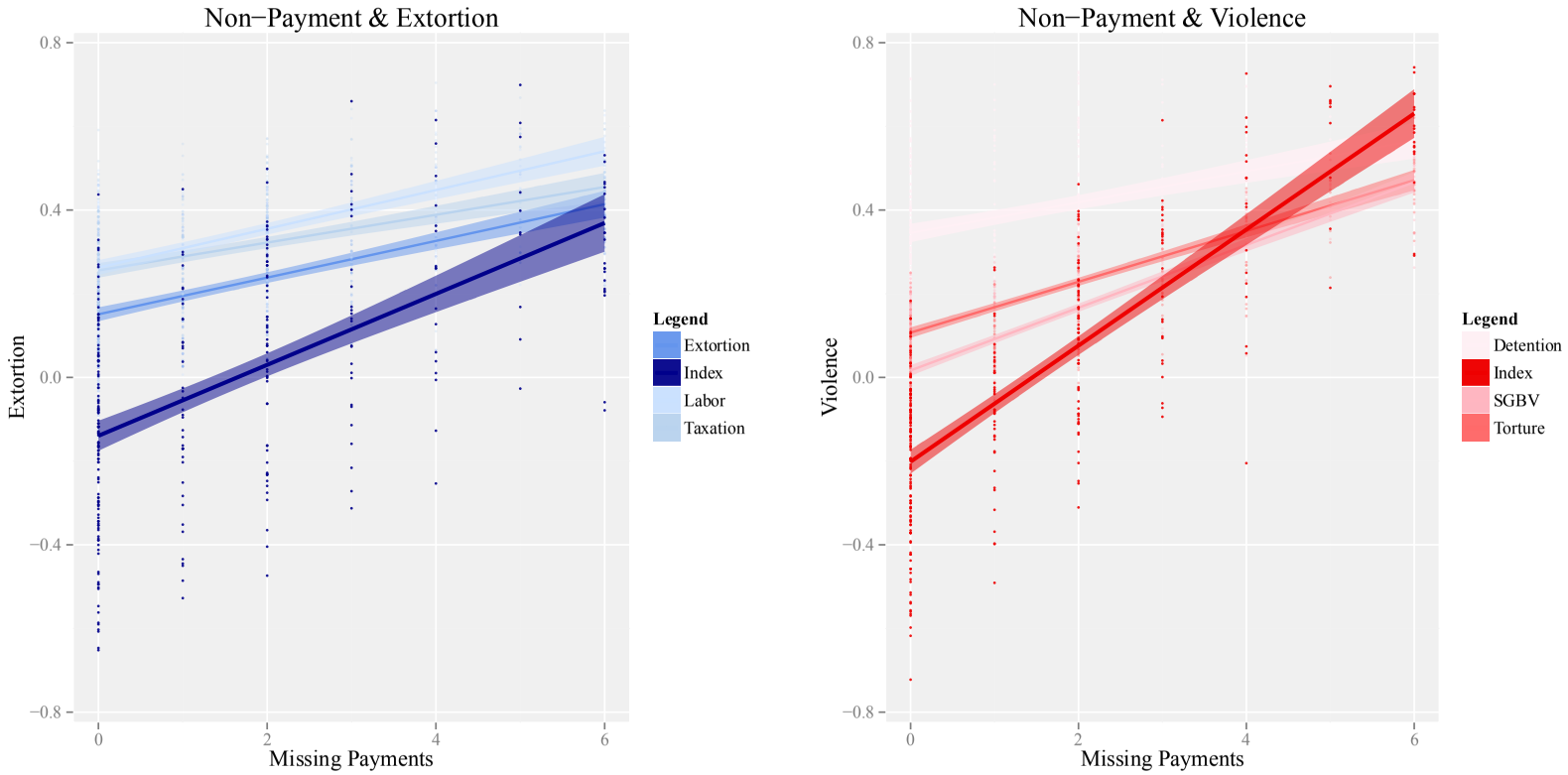
Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

Table 5: The Impact of Non-Payment on Violence

	Detention		Torture		SGBV		Index	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	0.352^{***}	0.223^{***}	0.105^{***}	0.143^{***}	0.023	0.084^{*}	-0.214^{***}	-0.194^{*}
	(0.036)	(0.065)	(0.029)	(0.054)	(0.024)	(0.045)	(0.056)	(0.105)
Missing Payments	0.038^{**}	0.046^{***}	0.065^{***}	0.060^{***}	0.072^{***}	0.073^{***}	0.148^{***}	0.148^{***}
	(0.015)	(0.015)	(0.012)	(0.012)	(0.010)	(0.010)	(0.023)	(0.024)
Controls		✓		✓		✓		✓
Observations	321	297	314	290	307	284	327	303
R^2	0.020	0.086	0.087	0.100	0.153	0.185	0.114	0.132

Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

Figure 3: The Impact of Non-Payment on Predation



Note: This figure visualizes the impact of non-payment on the core forms of predation analyzed: household extortion, taxation, forced labor, detention, torture, SGBV, and mean effects indices for extortion and violence. The figure plots least square fits with 95% confidence intervals accounting for the following controls: rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status.

The results highlight the substantial and significant impact of missing payments on predation: missing payments are associated with higher levels of all types of extortion and violence against civilians, even when controlling for a set of key characteristics. The magnitude of the effects are large as well. When a unit moves from missing no payments to missing a month of payment, there is an a 15% - 35% increase in all forms of extortion and a 10% - 340% increase in all forms of violence.[34] It is important to note that the relationships estimated here are endogenous correlations; indeed, the very fact that missing payments are targeted suggests non-payment is not random. To mitigate concerns about endogeneity, I include a set of pre-treatment controls to account for unobserved heterogeneity.

To provide an additional check that missing payments are associated with increases in violence, I draw on a survey experiment I embedded in the soldier interview. The goal of conducting the survey experiment was to leverage randomization to generate a set of a clean, causal estimates on the effect missing payments have on violence as well as probe the mechanisms through which this relationship emerges.

The survey experiment described a tactical situation in which soldiers were deployed to a remote village to fight rebels and then asked whether, and the extent to which, they would predate. In one condition, the unit had been paid and received rations while in another condition they had not. The survey experiment was designed to maximize realism and validity: the experiment described a hypothetical tactical scenario that Congolese soldiers often experience, and both the experimental variation and contextual characteristics were authentic to experiences soldiers described in qualitative interviews. Nonetheless, this survey experiment serves as a measurement strategy more so than an intervention that aims to alter the behavior of respondents: it is used to validate the observational work and provide causal estimates of the precise magnitude of predation that does not suffer from endogeneity or recall issues. It also provides the ability to test whether there is a direct causal pathway between missing payments and violence without concerns over reversal causality that are present in the observational data. The two different tactical situations described to soldiers in the survey experiment were as follows:

[34]These estimates are based on predicted probabilities holding pre-treatment covariates at their mean. In moving from 0 to 1 month of missing payments, there is 34.7% increase in extortion, 14.1% increase in household taxation, 20.6% increase in forced labor, 13.6% increase in forced detention, 56.1% increase in torture, and 342.8% increase in SGBV.

Imagine that you are deployed in North Kivu for operations. Your unit has been deployed in a remote area to weed out rebels...The village is far from Goma but you and your unit have received rations and your salaries for the last two months. Operations are ramping up.	Imagine that you are deployed in North Kivu for operations. Your unit has been deployed in a remote area to weed out rebels...The village is far from Goma and you and your unit have not received rations nor your salaries for the last two months. Operations are ramping up.

Given this scenario, soldiers were asked to identify how many barriers they would erect in the village and how much they would tax civilians in each household in the village. Table 6 reports results for the survey experiment; appendix E reports summary statistics for these variables as well as balance tests.

Table 6: Experimental Impact of Non-Payment on Predation

	Barriers Erected		Extortion Rate	
	(1)	(2)	(3)	(4)
Intercept	1.150***	1.445***	211.409***	61.381
	(0.193)	(0.309)	(43.494)	(72.052)
Missing Payments	0.615**	0.412*	143.463**	143.684**
	(0.271)	(0.219)	(61.510)	(64.284)
Controls		✓		✓
Observations	311	305	298	275
R^2	0.016	0.108	0.018	0.055

Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; ** $p < .05$; *** $p < .01$.

Theses results demonstrate that soldiers would erect significantly more road-blocks and increase their household taxation rate when unpaid. The magnitude of these results are stark: soldiers report that they would on average erect half another roadblock and that they would increase their household taxation rate by around 145 Congolese Francs, which is equivalent to 30% of a Congolese daily salary. The sign and significance of these results resonate with the observational findings and provide complementary estimates on the magnitude of extortion. It is important to note that the observational data capture unit-level behavior; the survey experiment captures individual-level behavior. The similarity in results suggest the relationship between non-payment and predation is a powerful dynamic that operates at both units of analysis.

While both the observational and survey-experimental data highlight the striking relationship between non-payment and violence, a crucial question is whether violence operates as an additional screening mechanism to determine loyalty. One respondent's experience underscores the role of violence as a screening process.[35] The respondent was integrated into the army from an armed group that he joined just prior to reintegration in order to inflate the ranks of the rebel group and reap the subsequent benefits.[36] During a deployment in North Kivu, the respondents' unit did not receive wages and the unit commander instructed the soldiers to pillage and loot local houses.[37] In the interview, the respondent recounted that he found the looting objectionable and brought back an insufficient number of goods to his commander. The commander, who judged this as a signal of disloyalty, broke the soldier's arm as a punishment, which resulted in his discharge. The respondent repeatedly described the situation as a trial in which he was unable to prove himself to his commanding officer and was therefore ejected. Other in-depth interviews reported similar stories: violence was used as an exercise to determine the true type of soldiers and often resulted in defection by those who were not committed.

This vignette resonates with other soldier experiences and provide suggestive evidence that violence is used as a further screening process. To further assess whether violence is indeed used as a unique screening process, I analyze whether non-payment change norms around the admissibility of predation or the level of discipline soldiers believe should be associated with predation with data from the survey experiment. Soldiers were asked whether extorting or injuring a civilian would be admissible and how soldiers engaged in this behavior should be punished.[38] If violence were indeed another screening mechanism, violence should be seen as a more admissible and punished less. Table 7 analyzes this relationship and reports results.

The data show surprisingly little movement: missing payments fail to shift norms around admissibility or punishment for abuse. Coupled with the result that soldiers report that they would engage in higher levels of predation, these quantitative data suggests that violence might not operate as an additional screening mechanism. One alternative argument may

[35] Interview with ex-FARDC in North Kivu, 2015.

[36] The reintegration process allocated rank within the army according to the size and seniority of armed groups prior to their entrance. As such, armed groups exaggerated their size and conducted broad and indiscriminate recruitment campaigns in the months leading up their reintegration.

[37] The precise locations are withheld to protect the identity of respondents and provide anonymity.

[38] While the number of barriers erected and the extortion rate are the dependent variables for assessing direct effects in the survey instrument, more severe forms of predation are used to test issues around norms. This provides a harder test of mechanisms and also more closely approximates violent behavior

Table 7: Mechanisms Underlying the Effect of Non-Payment on Predation

	Extortion				Violence			
	Admissibility		Discipline		Admissibility		Discipline	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	1.346***	1.320***	2.450***	2.450***	1.196***	1.112***	2.600***	2.668***
	(0.064)	(0.105)	(0.079)	(0.132)	(0.039)	(0.064)	(0.074)	(0.123)
Missing Payments	0.057	0.050	−0.045	−0.054	−0.006	−0.015	−0.080	−0.055
	(0.089)	(0.094)	(0.111)	(0.117)	(0.054)	(0.057)	(0.104)	(0.109)
Controls		✓		✓		✓		✓
Observations	331	303	344	315	331	304	344	315
R^2	0.001	0.055	0.0005	0.016	0.00004	0.054	0.002	0.015

Note: These results leverage data from the survey experiment. Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. * significant at $p < .10$; **$p < .05$; ***$p < .01$.

be that violence is the byproduct of extortion that escalates. In this case, we would not expect norms around violence to change given that it may just follow from extortion. While this might explain the lack of change around violence, it fails to explain the lack of change around extortion. The interpretation of results on these mechanisms warrants caution. First, these results derive from a survey experiment and the treatment may not have been strong enough to change reported norms. Second, the experiment was fielded with soldiers who had previously experienced non-payment but did not defect. As such, the results are censored and may look different had those who defected been apart of the sample.

Ultimately, when considering both qualitative and quantitative data on the role of violence as a screening mechanism, evidence is mixed. However, the qualitative data provide a more principled test, speaking directly to experience and behavior. A relatively conservative interpretation that integrates these inferences suggests that violence is only partially used as a screening mechanism to assess loyalty and that it may also stem from prior screening mechanisms. Nonetheless, the relationship between non-payment and violence against civilians is clear: non-payment is systematically associated with higher levels of predation. The consistency of these results across various types of extortion and violence underscore the striking robustness and intensity of this relationship.

5.4 Predation & Loyalty

While the evidence is mixed on the role that civilian abuse plays in distinguishing the committed from the untrustworthy, it does play another role: generating cohesion within

units and the military more broadly. Indeed, engaging in both extortion and violence against civilians when unpaid helps cultivate the very quality that regimes seeks to screen for in the first place. In this context, cohesion may not only reflect fidelity to the regime, but also a reduction in exit options for soldiers who dependence on the regime increases by engaging in abuse.

Social psychology has long cited the ability of violent acts to generate cohesion and loyalty to a given group (Littman and Paluck, 2015). Exacting violence increases in-group affinity with other members of the unit, increasing the relative benefit to staying with that group. This resonates with recent work by Cohen (2013), in which she shows that one of the causes of sexual violence is the need to create in-group solidarity. Engaging in violence may also increase loyalty by increasing the costs of departure. Those who have participated in combat or are responsible for civilian abuse may not be easily welcomed back into local communities. This may be particularly important when soldiers serve in the areas from which they hail or ethnic homelands where information about their behavior is more visible. Reducing exit options may increase cohesion by increasing dependence on the military.

Conceptualizing loyalty and cohesion in this way illuminates how the process of cultivating these qualities shapes the institutional profile of the army. If cohesion captures a reduction in outside options, screening for loyal soldiers may ultimately generate a group of predatory soldiers. Indeed, those who predate effectively will increase their dependence on the regime compared to those who do not.[39] This may explain how cultivating cohesive and loyal forces ultimately generates predatory institutions.

In multiple interviews with soldiers, many professed pride over the abuse they had committed, even if they were simultaneously able to acknowledge the fact that it was wrong.[40] In interviews, soldiers connected violence to the challenging times of non-payment weathered, deepening the relationship between predation and very process of distinguishing loyalty. Many soldiers invoked the phrase, "I did it for the unit" and highlighted the importance of aiding the unit.[41] In this sense, violence may have genuinely generated loyalty or served as a justification to engage in violence, which in turn, cemented this notion. While soldiers did not directly attest to a reduction in exit-options created through violence, the loyalty expressed may indeed be a function of this mechanism.

To formally interrogate the impact of non-payment and predation on loyalty, tables 8

[39] This assumes that exit costs are individually internalized rather than collectively internalized.

[40] Interviews with FARDC in North Kivu, 2015. See Baaz and Stern (2008) for further interviews with soldiers in which they acknowledge norms against civilian abuse despite participating in this type of violence.

[41] Interviews with FARDC in North Kivu, 2015.

and 9 interact missing payments with predation and analyze whether this predicts increases in reported pride in the FARDC for both extortion and violence against civilians. The same regressions are estimated to analyze the impact of missing payments and predation on reported pride in one's unit and are presented in appendix F; results are similar to those for FARDC pride. Figure 4 visualizes the interaction of non-payment on the mean effects index for extortion and violence for both pride in the FARDC and pride in the unit.

Table 8: Extortion & Non-Payment Generate Loyalty

	Outcome Variable: FARDC Pride							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	3.421^{***}	3.118^{***}	3.406^{***}	3.109^{***}	3.463^{***}	3.199^{***}	3.345^{***}	3.024^{***}
	(0.074)	(0.127)	(0.079)	(0.133)	(0.081)	(0.131)	(0.067)	(0.125)
Missing Payments	-0.123^{***}	-0.113^{***}	-0.116^{***}	-0.110^{***}	-0.189^{***}	-0.185^{***}	-0.094^{***}	-0.081^{***}
	(0.034)	(0.034)	(0.035)	(0.035)	(0.037)	(0.039)	(0.028)	(0.029)
Extortion Type$_i$	-0.365^{**}	-0.499^{**}	-0.199	-0.248	-0.313^{**}	-0.400^{***}	-0.201^{**}	-0.255^{***}
	(0.184)	(0.199)	(0.155)	(0.167)	(0.145)	(0.154)	(0.086)	(0.092)
Missing Payment × Extortion	0.162^{**}	0.182^{***}						
	(0.066)	(0.069)						
Missing Payment ×			0.114^{*}	0.122^{*}				
			(0.060)	(0.063)				
Missing Payment × Labor					0.238^{***}	0.253^{***}		
					(0.056)	(0.057)		
Missing Payment × Index							0.114^{***}	0.120^{***}
							(0.032)	(0.033)
Controls		✓		✓		✓		✓
Observations	315	294	316	294	314	293	320	298
R^2	0.045	0.082	0.035	0.070	0.081	0.119	0.063	0.100

Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

The positive interaction effect that engaging in various forms of predation when not paid has on loyalty demonstrates that soldiers who do engage in abuse during these challenging times are significantly more likely to report pride in both their units and the FARDC. This is particularly clear in figure 4 in which the red lines estimate the impact of non-payment and predation for individuals who are paid (e.g., no missing payments) and the blue lines estimate the impact of non-payment and predation for those who are not paid: while the red line is always decreasing, the blue line is always increasing.

There are two important features of these results. First, it is the interaction between non-payment and engaging in violence that generates these loyalty effects. Results not reported here suggest that engaging in violence does not directly increase loyalty within units. This departs from the extant literature which holds that violence has a direct and positive impact

Table 9: Violence & Non-Payment Generate Loyalty

	Outcome Variable: FARDC Pride							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	3.418^{***}	3.175^{***}	3.417^{***}	3.159^{***}	3.437^{***}	3.133^{***}	3.360^{***}	3.046^{***}
	(0.085)	(0.133)	(0.072)	(0.128)	(0.070)	(0.128)	(0.068)	(0.124)
Missing Payments	-0.163^{***}	-0.166^{***}	-0.130^{***}	-0.125^{***}	-0.137^{***}	-0.135^{***}	-0.112^{***}	-0.104^{***}
	(0.039)	(0.040)	(0.035)	(0.036)	(0.034)	(0.035)	(0.030)	(0.031)
Violence Type$_i$	-0.164	-0.270^{*}	-0.182	-0.252	-0.409	-0.398	-0.181^{*}	-0.236^{**}
	(0.141)	(0.152)	(0.197)	(0.209)	(0.260)	(0.283)	(0.098)	(0.105)
Missing Payment × Detention	0.174^{***}	0.194^{***}						
	(0.057)	(0.059)						
Missing Payment × Torture			0.161^{**}	0.170^{**}				
			(0.064)	(0.067)				
Missing Payment × SGBV					0.202^{***}	0.215^{***}		
					(0.070)	(0.073)		
Missing Payment × Index							0.102^{***}	0.114^{***}
							(0.029)	(0.030)
Controls		✓		✓		✓		✓
Observations	314	292	307	285	300	279	320	298
R^2	0.056	0.091	0.047	0.075	0.055	0.097	0.065	0.105

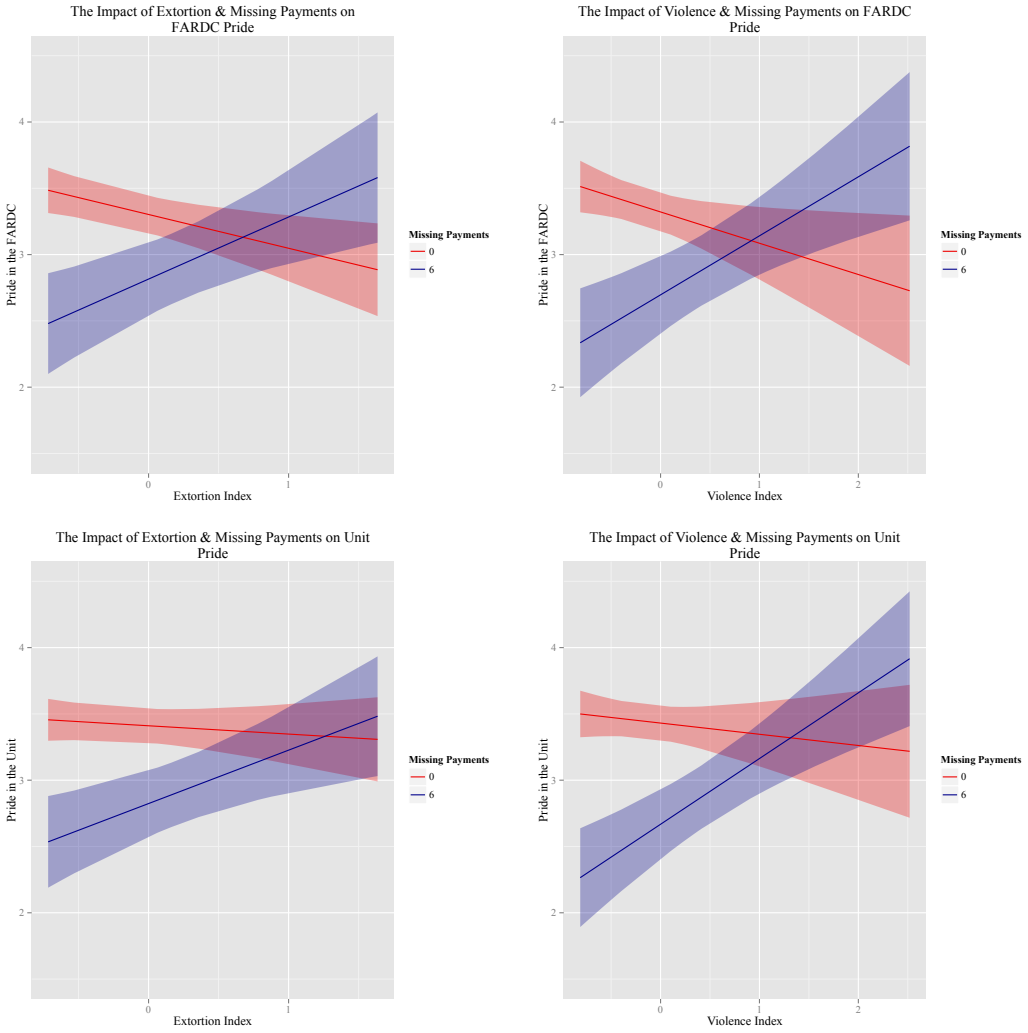
Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

on loyalty. Rather, it is only when violence is a part of a screening process sanctioned through the unit does it serve to generate cohesion. This highlights the importance of identifying scope conditions for when violence serves to increase group-affinity.

Second, results show that there are increases in loyalty to both the unit and the military. If the joint effect of non-payment and predation were to generate cohesion to the unit without increasing loyalty to the military and regime more broadly, this process may be self-defeating. Indeed, soldiers who are loyal to their unit more so than the army may be more willing to follow commanding officers into a coup. The cohesion that the army seeks to cultivate is only useful insofar is it increases loyalty to the broader regime. These results suggest that this is the case.

It is important to note that measures of reported pride are only a partial measure of loyalty and cohesion. Rather than directly capture fidelity to the regime or willingness to refrain from participating in a coup or rebellion, pride reflects emotional and psychological satisfaction with the military. While this does translate into a deeper level of devotion for the military, this measure is incomplete. Nor does this directly capture the ways in which cohesion may be the product of reducing exit options. This in part stems from challenges of capturing loyalty in reported survey measures as well as the inductive approach used in

Figure 4: The Impact of Non-Payment and Predation on Loyalty



Note: This panel plots the interaction of non-payment on the mean effects index for extortion and violence for both pride in the FARDC and pride in the unit. The interactions are estimated using ordinary least squares with the following controls set at their means: rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. 95% confidence intervals are plotted around the estimates.

this project. These results are suggestive in nature and the consistency and robustness of results across reported levels of pride speak to one component of loyalty.

6 Discussion

Drawing on a mixed-methods approach, I analyze how the Congolese regime uses targeted non-payment as a screening mechanism to distinguish loyalty and detail the civilian abuse that this process generates. The evidence garnered here is imperfect, and corroborative rather than decisive in nature. As such, I in turn discuss and empirically examine the critical assumptions underlying the model, assess rival explanations, and consider the generalizability of the findings.

6.1 Are Those Who Stay, Loyal?

Screening mechanisms are only effective insofar as they adequately distinguish individuals by type. The critical assumption in the screening model developed here is that non-payment separates the loyal from the disloyal, or that enduring periods of non-payment are negatively correlated with loyalty. While I provide evidence that shows how engagement in violence among non-paid units generates cohesion, I lack direct evidence on the type of soldiers who defect. Ideally, I would compare the profile of soldiers who remained in the army to those who had defected; however, I'm limited in this approach given the challenges of identifying and tracking defectors.

Instead, I draw on the sentiment and content soldiers used in interviews to buttress this argument. The language soldiers use to describe periods of non-payment resonates with notions of commitment to a greater good. Indeed, the soldiers interviewed cast times of non-payment as trying, but as a requisite hardship that was ultimately minor in the broader state-building project. This was furthered in language used by high-ranking officials, who highlighted that soldiers who didn't leave were truly part of the national project.

6.2 Non-Payment and Violence as a Screening Mechanism

An important question is why the military doesn't use less costly processes to generate signals of loyalty. Indeed, even if abuse is only the byproduct of screening soldiers for loyalty, there is broad awareness that non-payment is associated with higher levels of predation. Civilian abuse has drawn international condemnation and more importantly, violence against civilians may reduce support for units who require the cooperation of local communities or may even erode popularity for the regime. While high levels of civilian abuse has drawn criticism from the international community, it has also repelled their interventions into the

security sector. Donors who previously supplied the army and invested in the military have shut down their programs out of frustration with the inability of their work to reduce abuse. This has only benefited the regime, which seeks to avoid interference in the institution that poses the greatest internal threat.

Moreover, as soldiers, activists and security sector experts repeatedly claimed in interviews: “impunity rules." The general lack of accountability for violence has driven the costs of engaging in violence extremely low. This is true for soldiers, who rarely face retribution for abuse, as well as for the autocratically oriented regime that is fundamentally unconcerned with being replaced at the ballot box. Only in extreme cases is punishment meted out and even then, it is often more performative than substantive: in the case of Minova in which soldiers systematically raped 130 women and girls in 2012, for example, 39 soldiers were tried for sexual violence and only 2 were convicted of rape.

To bring additional evidence to bear here, I interrogate how sanctioning may play into this strategic logic by analyzing whether soldiers who are not paid and are violent face differential levels of punishment. Sanctions capture official military punishment, which as noted above, is limited and only partially reflects the underlying dynamics of military behavior. If regimes do indeed use non-payment as a strategy to discriminate loyalty with the knowledge that it will generate defection and violence, then they should refrain from punishing them as this would render the core strategy ineffectual. Given the lack of formal punishment, using these measures provides a conservative test of this strategy. Table 10 interacts missing payments with predatory behavior and reports the results for the mean effects indices for extortion and violence. The results do not change across the constituent components, which are presented in appendix G.

Here, analysis suggests that individuals who are not paid and engage in civilian abuse are systematically less sanctioned than their counterparts. Lower rates of punishment signal to soldiers that when they go unpaid, they will not be punished for predation. This buttresses the general logic that violence serves to generate loyalty as sanctions for behavior that was ultimately encouraged or induced by the regime would undercut its purpose.

6.3 Alternative Explanations

Three alternative theories that explain similar patterns in the data should be addressed. First, while I argue that non-payment screens out disloyal soldiers, it may also drive high-quality soldiers to exit if loyalty is correlated with better exit options. In this case, non-

Table 10: Sanctioning Unpaid Soldiers Who Predate

	Extortion		Violence	
	(1)	(2)	(3)	(4)
Intercept	0.494***	0.506***	0.486***	0.484***
	(0.036)	(0.067)	(0.036)	(0.066)
Missing Payment	0.029**	0.026*	0.048***	0.047***
	(0.015)	(0.016)	(0.016)	(0.016)
Mean Effects Index	0.207***	0.197***	0.216***	0.190***
	(0.045)	(0.049)	(0.051)	(0.055)
Missing Payment × Index	−0.047***	−0.049***	−0.077***	−0.073***
	(0.017)	(0.018)	(0.015)	(0.016)
Controls		✓		✓
Observations	323	299	323	299
R^2	0.078	0.090	0.090	0.102

Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; ** $p < .05$; *** $p < .01$.

payment would result in units dominated by 'low-quality' soldiers who are opportunistic or abusive. This story is consistent with findings on the relationship between missing payments and violence and resonates with theories forwarded by Weinstein (2006). Evidence to refute this story is largely qualitative: soldiers repeatedly cited loyalty as the key characteristic of those who were willing to weather challenging times of non-payment. More importantly, these stories are not necessarily mutually exclusive as loyalty may be not be associated with soldier efficacy. Indeed, if better exit options are correlated with competency more so than loyalty, it's plausible that non-payment creates loyal but incompetent units. Risk-averse regimes probably prefer loyal but incompetent soldiers over disloyal competent ones (Egorov and Sonin, 2011).

Second, missing payments may operate as a mechanism to provide wage cuts to units with low marginal productivity. In this story, the regime observes the performance of soldiers and downwardly adjusts their wages accordingly. However, if this were true, you would likely observe periods of non-payment extend beyond a single month and rotate in a less consistent pattern. It's quite unlikely that soldier performance would exhibit such systematic staggered patterns. Moreover, if the regime were to engage in this type of wage reduction, they would likely reduce how much specific units get paid relative to rank. However, the Congolese army has an established wage floor and in practice consistently fulfills these payments when delivered. In the sample of interviewed soldiers, 81% of respondents said they were always

paid in full when they were paid. Lastly, rather than cut pay according to performance, the regime is known to provide additional bonuses for better behavior known as *primes*. Neither commanding officers nor soldiers reported that they would be docked for their behavior or performance. While this doesn't decisively rule out this alternative story, evidence on payment rotation, coupled with complete wage fulfillment as well as the presence of a bonus mechanism, suggests that the army is not downwardly adjusting wages.

A third concern is that a simpler argument of risk management may be sufficient to explain the results. Indeed, analysis that illustrates the army selectively allocates non-payment by unit type over time also reveals a story in which the army is solely attempting to spread risk rather that distinguish loyalty. Here, these theories are non-rival. Rather, this is a story in which under-resourced bureaucracies leverage institutional weaknesses to further serve them strategically. Evidence suggests that faced with the inability to pay all forces, provincial-level officers use this constraint to solve the core guardianship dilemma as well. Similarly, rather than argue that predation is solely caused by this process, I argue that this process explains substantial variation in extortion and violence against civilians. It is important to note, however, that a simpler argument fails to explain the extent to which military officials, high-ranking and low, cast non-payment as a form of trial and tribulation that screens out loyalty.

6.4 Generalizability

A crucial question is the extent to which the findings in this paper help explain current or historical trends in militaries or institutions in fragile states. First, while the context seems particularly challenging given that the Congolese army is an amalgamation of previously warring factions, 40% of the civil wars that took place between 1945 and 2006 resulted in reintegrated militaries (Hartzell, 2014). In addition to this contemporary similarity with other armies, reintegration remains a key component of negotiated settlements and analogous militaries are likely to emerge in the future. In a salient cross-national study of the effects of military reintegration, Glassmyer and Sambanis (2008) find that reintegration has no positive impact on short- or long-term peace. The findings in this paper, which suggest that strategies used to deal with the challenges of reintegration ultimately results in civilian abuse, may provide a micro-level explanation to these broader trends.

Additionally, reconciling competing factions with questionable loyalty is a common challenge in all post-conflict institutions, not just militaries. Indeed, the guardianship dilemma

is a case of a principal-agent problem that vexes all leaders who must effectively identify loyal individuals who will faithfully implement delegated tasks. It is the similarity in the structural conditions that generate this strategic environment that render these findings insightful to other contexts. However, the novelty of the screening mechanism identified in this paper makes assessing its generalizability difficult. Indeed, while the literature on screening mechanisms in advanced bureaucracies highlights the role of educational investments (Spence, 1973) or political affiliation (Calvo and Ujhelyi, 2012), rarely do weak institutions have the capacity to meaningfully implement these mechanisms. Identifying and analyzing alternative screening mechanisms is key to understanding how leaders manage these problem in weak institutional settings.

What of the findings on violence? While the focus on broad conflict-level characteristics has dominated the study of civilian abuse in political science (Valentino, 2014), this work highlights the role of violence in both testing and generating loyalty within institutions. These findings resonate with results from both case studies and laboratory experiments in social psychology that emphasize the ability for violence to generate cohesion, and in doing so, speak to the more broadly generalizable role of loyalty in the study of civilian abuse (Littman and Paluck, 2015). Perhaps more relevant, cross-national results that highlight the relevance of this mechanism in the determinants of civilian abuse (Cohen, 2013) suggest that the results on violence may indeed travel to other contexts.

Yet, the scope conditions that shape this analysis are similarly important to highlight. These findings more directly speak to weak states wracked by conflict in which regimes fear the destabilizing power of their military. Moreover, the strategies highlighted here are particularly important in heterogeneous societies and institutions and may provide weaker analytic leverage in understanding homogeneous contexts.

7 Conclusions

Regimes across the world face the same dilemma: they must build armies effective enough to foil external threats, yet in doing so create forces that are powerful enough to depose them. In this paper, I develop and test the argument that the Congolese regime uses non-payment as a screening strategy to distinguish loyal soldiers from uncommitted soldiers in order to solve this problem. I contend that this screening process fuels civilian abuse, which is managed by commanding officers and used to cultivate loyalty and internal cohesion. To empirically illustrate this argument, I show that the regime selectively allocates wages,

which increases both defection by soldiers who are disloyal and abuse exacted by loyal soldiers who remain. Soldiers who engage in abuse during the trying times of non-payment are substantially more likely to report higher levels of pride in both their unit and the army.

This article contributes to a rich literature on the political economy of institutions in fragile states. By analyzing how regimes leverage financial constraints to develop novel screening strategies to distinguish loyalty among soldiers in the military, this paper illuminates the institutional foundations of regime survival. The tragic implication is that the very strategy the state uses to ensure protection from within generates high levels of abuse towards its own citizens. In detailing this cause of predation, this paper contributes a novel explanation for civilian abuse to scholarship that seeks to understand the determinants of this type of violence. Lastly, in demonstrating that violence perpetrated by soldiers generates internal cohesion, this article illustrates how this type of abuse may generate the very loyalty that regimes seek cultivate in order to maintain their power. In this sense, violence against civilians may ultimately generate and reinforce predatory institutions.

I close by considering the policy implications of this study. First and foremost, effectively supporting weak institutions requires making investments in mechanisms that enable leaders to overcome core principal-agent problems. This is particularly salient in fragile states and settings in which regimes inherit heterogeneous institutions where they face a larger challenge of screening out those they distrust. Establishing formal screening mechanisms such as recruitment exams or training programs may allow regimes to substitute out of pernicious screening strategies such as non-payment. Crafting policies and aid packages that help leaders overcome the challenges posed by building strong institutions is key to the broader statebuilding exercise (Krasner and Weinstein, 2014). These investments are not only crucial to reducing the impact of armed conflict by strengthening institutions in these contexts, but are necessary to making progress on development given that half of the world's poor live in countries afflicted by violence (World Bank Group, 2014a).

This study also provides insight on security sector reform and military assistance. One direct implication of this research is that providing budgetary support to help regimes pay their soldiers may not be effective if regimes use non-payment to assess soldier loyalty. More broadly, identifying how actions that appear to reflect bureaucratic mismanagement serve other strategic purposes is key solving underlying problems. Second, military reintegration as a policy may generate more distrust and dysfunction than it seeks to resolve. At the very least, reintegration amplifies the guardianship dilemma by bringing combatants with

opposing loyalties under a unified command. In cases in which reintegration is a requirement for a negotiated peace, actors must be aware of the downstream consequences of this choice and implement policies that provide countervailing balance.

Lastly, this study illuminates new ways to reduce civilian abuse. Analysis here demonstrates that violence against civilians is at least partially a function of strategies used to solve the guardianship dilemma. While a wide variety of programs have been launched by international organizations to prevent civilian abuse perpetrated by military forces, to the best of my knowledge, none analyzes violence as an outcome of this particular problem. Accurately diagnosing the cause of civilian abuse is key to prescribing appropriate solutions. In this sense, combating this type of violence may lie in helping regimes solve the very screening dilemmas that drive this abuse.

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Appendices

A Survey Methodology

Collecting accurate accurate recall data from survey respondents is notoriously challenging (de Nicola and Gine, 2014). To facilitate recall, I identified a set of prominent historical cues associated with each time period that enumerators would discuss with survey respondents when asking questions. This method helped ground respondents in the relevant time period in order to improve the accuracy and precision of their memory. Table 11 provides the month-to-month historical cues that were used during the survey.

Table 11: Historical Cues Embedded in the Soldier Survey

Month	Historical Cues
March 2015	The 8th of March; the month of women.
February 2015	Operations against the FDLR began and change in military hierarchy.
January 2015	The 16-17 January; The anniversary of Lumumba and Mzee Kabila.
December 2014	Noel; The change from Matata 1 to Matata 2.
November 2014	The death of General Bahuma and the funeral of Mamadou.
October 2014	Operations against the ADF were launched.

Note: These historical cues were embedded in soldiers surveys to improve recall. These cues were developed in conjunction with members of the FARDC and capture familiar historical events.

B Measure Mapping

Closed-form survey measures that capture characteristics of interest were developed through in-depth qualitative work and piloted prior to the launch of the survey. Table 12 enumerates the questions that were used in the survey and are operationalized in the quantitative analysis.

Table 12: Operationalizing Survey Measures

Var	Component Survey Question
Rank	Rank in the FARDC.
Ethnic Rwandan	Maternal language.
Presidential Co-ethnic	Provincial Home.
Ex-rebel	Participation in armed group.
Missing Payments	Did you receive your payment in month X?
Defection	During the last 6 months, has any soldier from your unit defected?
Extortion	Have you witnessed any looting by soldiers in your unit?
Illegal Taxation	Have you witnessed any civilian taxation by soldiers in your unit?
Forced Labor	Have you witnessed any forced civilian labor imposed by soldiers in your unit?
Forced Detention	Have you witnessed any civilian detentions imposed by soldiers in your unit?
Torture	Have you witnessed any civilians being tortured by members of your unit?
Sexual Violence	Have you witnessed any sexual violence against a women by members of your unit?
Unit Pride	How proud of your unit are you?
FARDC Pride	How proud of the FARDC are you?
Military Sanction	During the past 6 months, has any one in your unit been sanctioned by the military hierarchy?

Note: This table presents the measures used in analysis. The variables associated with the extortion and violence are used to construct a means effect index for analysis.

C FARDC Payment Structure

Monthly salaries within the FARDC are notoriously low and exhibit little variation between rank. Annual increases in salary are nominal and rarely keep up with inflation. While additional material incentives and support is provided to soldiers, monthly salaries are the financial backbone of soldier livelihood. Table 13 details official monthly payments by rank as of April 2015.

Table 13: FARDC Rank Structure & Salary Levels

Rank	Official Salary (Francs)	USD Equivalent
Sans Classe	77,000	82.99
Soldat de deuxiéme classe	77,000	82.99
Soldat de premiére classe	77,350	83.37
Caporal	77,700	83.75
Sergent	78,000	84.07
Sergent Premiére	79,700	85.91
Sergent Major	80,150	86.39
Premier Sergent Major	80,500	86.77
Adjudant	81,200	87.52
Adjudant de premier classe	81,600	87.95
Adjudant Chef	82,000	88.39
Sous-lieutenant	82,700	89.14
Lieutenant	83,200	89.68
Capitaine	83,700	90.22
Major	86,000	92.70
Lieutenant Colonel	88,200	95.07
Colonel	91,200	98.30

Note: The top three ranks, General de Brigade, General Major and Lieutenant General are not included. This uses a conversion factor of 927.76 Congolese Francs to the US Dollar, dated August 20th, 2015.

D Measurement Error

A key threat to the analysis conducted in this paper is that measurement error in the recall data may bias estimates. Measurement error is a problem that plagues survey data and has long been an area of focus in econometrics (Black et al., 2000; Carrol et al., 2006; Hausman, 2001). Assessing the presence and extent of measurement error requires multiple measurements of the same indicator as well as the assumption that one is relatively error-free, which has in turn fueled investments in 'validation' data. Broadly, two classes of non-sampling error emerge: classical measurement error and non-classical measurement error. To briefly provide a framework, consider the case in which error is introduced into an independent variable, x, when estimating the following equation:

$$y = \beta x + \epsilon \tag{1}$$

In the following equation x captures the true value of a given quantity; for example, the number of months a soldier went unpaid. However, we only observe x^*, which contains the true value x as well as additive measurement error μ:

$$x^* = x + \mu \tag{2}$$

A model of classical error imposes two strict assumptions. First, $E(\mu) = 0$ and $var(\mu) = \sigma_\mu^2$. Second, μ is uncorrelated with the true dependent and independent variables, and σ_μ^2 is uncorrelated with ϵ. Identifying whether error is classical is important because given these assumptions, $plim\hat{\beta} = \lambda\beta$ where $\lambda = \frac{\sigma_x^2}{\sigma_x^2+\sigma_\mu^2}$ (Bound et al., 2001). Because λ is bounded between 0 and 1, when assumptions of classical error are invoked in a linear model, point estimates are attenuated.

While the properties of point estimates in the presence of classical error are well-defined, it is less clear when error is non-classical.[42] For example, when the assumption that the measurement error is uncorrelated with the true value is relaxed, $plim\hat{\beta} = \beta\left[\frac{\sigma_x^2+\sigma_{x\mu}}{\sigma_x^2+\sigma_\mu^2+2\sigma_{x\mu}}\right]$; as $\sigma_{x\mu}$ increases, so does the extent to which the point estimates are biased, if more than half of the variance of x^* is caused by the measurement error. If that is not the case, it decreases the attenuation factor. Importantly, in cases in which the measurement error is

[42] Measurement error is non-classical be definition for binary variables as the misclassification of 0 to 1 or 1 to 0, results in a negative correlation with the true variable. This is particularly relevant for studies of conflict that focus on 'onset' or other measures dichotomous in nature.

severe, this reliability ratio may have the opposite effect and amplify the point estimate, plausibly changing its direction (Black et al., 2000).

One disadvantage to working with weak and abusive military institutions in countries afflicted by conflict is the non-existence of validation data. As such, I crafted the soldier survey to include internal checks that facilitate assessing measurement error. Specifically, I asked about histories of payments in two different sections of the survey in two different versions: one aggregate measure over 6 months and one month-to-month measures. The motivation for this was to generate a within-respondent strategy to assess measurement error.

The structure of the instrument provides the ability of analyzing measurement error around payment histories. Using both reports of payments, figure 5 visualizes the distribution of measurement error for the sample of respondents.

Figure 5: Distribution of Measurement Error

Note: This figure visualizes the standardized mean differences in pre-treatment covariates for assignment to treatment in the survey experiment.

This figure illustrates large heaping around 0, which reflects individuals reporting the same payment histories twice in different parts of the survey. The distribution around 0 is relatively normal, though skewed positively with some respondents provide diametrically

opposed payment histories in the same survey.[43] This provides suggestive evidence that the nature of the measurement error is normal and may not introduce large systematic biases in coefficient estimation, but rather attenuate point estimates.

[43]The correlation between these measures is 0.4.

E Survey Experiment

This section presents summary statistics for the measures analyzed in the survey experiment as well as analysis to assess whether the randomization was balanced across pre-treatment covariates. Table 14 presents summary statistics for the outcome variables analyzed in the text of the article.

Table 14: Survey Experiment Descriptive Statistics

Var	**Min**	**Max**	**Mean**	**SD**	*N*
Barriers	0	25	1.46	2.40	311
Extortion Rate	0	3,000	283.14	534.87	298
Extortion Admissibility	1	4	1.37	0.81	331
Extortion Permissibility	1	4	2.41	1.03	348
Violence Admissibility	1	4	1.19	0.49	331
Violence Permissibility	1	4	2.54	0.97	348

Note: This table present summary statistics for the survey experiment variables.

The measures presented here are hypothetical in nature. Both barriers and extortion had no ceiling and were determined by respondents. Measures around admissibility and permissibility are ordinal variables in which higher numbers capture higher levels of admission and permission. Table 15 presents a balance table, which demonstrates that the experiment was balanced across key pre-treatment covariates in both treatment and control arms.

Table 15: Survey Experiment Balance Test

	Control	Treatment	Difference	*p*-value
Rank	6.28	6.41	0.13	0.41
Ethnic Rwandan	0.07	0.04	-0.03	0.02
Presidential Co-Ethnicity	0.10	0.10	-0.00	0.03
Ex-rebel status	0.27	0.30	0.02	0.05

Note: P-values reported are two-sided for the null-hypothesis of no effect.

F Unit Pride

This section reports results for how the interaction between missing payments and violence shape unit-level pride. To assess whether missing payments and violence jointly affect reported beliefs about unit loyalty in addition to FARDC loyalty, I estimate impact of the interaction between missing payments and violence committed on unit pride. Table 16 and 17 report this analysis. Results are consistent with the findings presented in the body of the article for FARDC pride and suggest that units that are not paid and are violent exhibit higher rates of unit-pride. The consistency across both units of analysis buttresses the interpretation that violence and missing payments jointly generate forms of loyalty within the military.

Table 16: Extortion and Non-Payment Generate Unit Pride

	Unit Pride & Extortion							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	3.419^{***}	3.228^{***}	3.426^{***}	3.205^{***}	3.400^{***}	3.241^{***}	3.383^{***}	3.199^{***}
	(0.068)	(0.117)	(0.073)	(0.121)	(0.074)	(0.120)	(0.062)	(0.115)
Missing Payments	-0.114^{***}	-0.118^{***}	-0.115^{***}	-0.118^{***}	-0.164^{***}	-0.178^{***}	-0.090^{***}	-0.098^{***}
	(0.031)	(0.031)	(0.032)	(0.032)	(0.034)	(0.035)	(0.026)	(0.027)
Extortion Type$_i$	−0.176	−0.176	−0.174	−0.123	−0.025	0.001	−0.085	−0.063
	(0.169)	(0.180)	(0.142)	(0.151)	(0.133)	(0.140)	(0.079)	(0.084)
Missing Payment × Extortion	0.112^{*}	0.107^{*}						
	(0.060)	(0.062)						
Missing Payment × Taxation			0.112^{**}	0.094^{*}				
			(0.055)	(0.057)				
Missing Payment × Labor					0.179^{***}	0.183^{***}		
					(0.051)	(0.052)		
Missing Payment × Index							0.085^{***}	0.078^{**}
							(0.029)	(0.030)
Controls		✓		✓		✓		✓
Observations	321	298	322	298	320	297	326	302
R^2	0.041	0.076	0.040	0.077	0.084	0.128	0.056	0.091

Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

Table 17: Violence and Non-Payment Generate Unit Pride

	Unit Pride & Violence							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	3.422^{***}	3.266^{***}	3.425^{***}	3.230^{***}	3.462^{***}	3.281^{***}	3.403^{***}	3.206^{***}
	(0.077)	(0.120)	(0.067)	(0.117)	(0.065)	(0.118)	(0.062)	(0.113)
Missing Payments	-0.162^{***}	-0.180^{***}	-0.120^{***}	-0.129^{***}	-0.141^{***}	-0.156^{***}	-0.116^{***}	-0.127^{***}
	(0.035)	(0.036)	(0.032)	(0.032)	(0.032)	(0.033)	(0.027)	(0.028)
Violence Type$_i$	−0.058	−0.094	−0.062	−0.075	−0.326	−0.116	−0.093	−0.085
	(0.128)	(0.136)	(0.179)	(0.187)	(0.235)	(0.251)	(0.089)	(0.093)
Missing Payment × Detention	0.164^{***}	0.177^{***}						
	(0.051)	(0.052)						
Missing Payment × Torture			0.128^{**}	0.130^{**}				
			(0.059)	(0.061)				
Missing Payment × SGBV					0.206^{***}	0.184^{***}		
					(0.063)	(0.065)		
Missing Payment × Index							0.095^{***}	0.097^{***}
							(0.027)	(0.027)
Controls		✓		✓		✓		✓
Observations	320	296	313	289	306	283	326	302
R^2	0.072	0.117	0.047	0.085	0.066	0.106	0.077	0.122

Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

G Payments, Violence and Sanctioning

To further analyze how the regime handles soldiers who are not paid and are violent, I analyze how this joint behavior predicts sanctioning. I regress sanctioning on the interaction between missing payment and predation. The tables in the core of the body present results for the mean effects index for extortion and violence and table 18 and 19 present results across the constituent parts of the indices. These results highlight that soldiers who go unpaid and are violent are systematically punished less. This is consistent with a story in which the regime uses non-payment as a strategy to discriminate loyalty and becomes more permissive of soldiers who remain in the army even when they abuse civilians.

Table 18: Sanctioning Unpaid Soldiers Who Extort

	State Punishment							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	0.434^{***}	0.815^{***}	0.366^{***}	0.584^{***}	0.372^{***}	0.755^{***}	0.494^{***}	0.786^{***}
	(0.040)	(0.209)	(0.041)	(0.211)	(0.043)	(0.207)	(0.036)	(0.205)
Missing Payment	0.046^{**}	0.040^{**}	0.049^{***}	0.041^{**}	0.073^{***}	0.069^{***}	0.029^{**}	0.021
	(0.018)	(0.019)	(0.018)	(0.019)	(0.020)	(0.021)	(0.015)	(0.016)
Extortion Type$_i$	0.223^{**}	0.212^{**}	0.413^{***}	0.381^{***}	0.306^{***}	0.266^{***}	0.207^{***}	0.186^{***}
	(0.098)	(0.106)	(0.080)	(0.088)	(0.078)	(0.084)	(0.045)	(0.049)
Missing Payment × Extortion	−0.052	-0.062^{*}						
	(0.035)	(0.037)						
Missing Payment × Taxation			-0.068^{**}	-0.071^{**}				
			(0.031)	(0.033)				
Missing Payment × Labor					-0.100^{***}	-0.104^{***}		
					(0.030)	(0.031)		
Missing Payment × Index							-0.047^{***}	-0.049^{***}
							(0.017)	(0.018)
Controls		✓		✓		✓		✓
Observations	318	291	319	291	318	291	323	295
R^2	0.035	0.065	0.105	0.115	0.065	0.092	0.078	0.094

Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

Table 19: Sanctioning Unpaid Soldiers Who are Violent

	State Punishment							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	0.326^{***}	0.693^{***}	0.427^{***}	0.828^{***}	0.421^{***}	0.879^{***}	0.486^{***}	0.863^{***}
	(0.044)	(0.206)	(0.040)	(0.207)	(0.038)	(0.210)	(0.036)	(0.202)
Missing Payments	0.081^{***}	0.070^{***}	0.065^{***}	0.059^{***}	0.085^{***}	0.079^{***}	0.048^{***}	0.042^{**}
	(0.020)	(0.021)	(0.019)	(0.020)	(0.019)	(0.019)	(0.016)	(0.017)
Violence Type$_i$	0.390^{***}	0.341^{***}	0.237^{**}	0.154	0.204	0.175	0.216^{***}	0.173^{***}
	(0.073)	(0.081)	(0.106)	(0.113)	(0.137)	(0.149)	(0.051)	(0.055)
Missing Payment × Detention	-0.107^{***}	-0.101^{***}						
	(0.029)	(0.031)						
Missing Payment × Torture			-0.099^{***}	-0.096^{***}				
			(0.035)	(0.037)				
Missing Payment × SGBV					-0.148^{***}	-0.148^{***}		
					(0.037)	(0.039)		
Missing Payment × Index							-0.077^{***}	-0.072^{***}
							(0.015)	(0.016)
Controls		✓		✓		✓		✓
Observations	317	289	310	282	303	276	323	295
R^2	0.103	0.110	0.044	0.077	0.082	0.123	0.090	0.112

Note: Models are estimated using ordinary least squares. Controls include rank, ethnic Rwandan, presidential co-ethnic, and ex-rebel status. Cross-sectional data are used for estimation. * significant at $p < .10$; $^{**}p < .05$; $^{***}p < .01$.